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Gleanings in Bee Culture

VOL. XXXVIII

SEPTEMBER 1, 1910

NO. 17



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What I Know About the Matter

MY mother had eleven children. Only three lived to mature age. Of course I am one of them. But you can see my start in life was not a strong one. I was a sickly child like the rest. In college I broke down from too much confinement and study, stayed out a year, tried it again, but had to give up. Doctor told me I must get outdoors to work. Did so, and soon got better. We moved on to our farm where we now reside, 38 years ago. Then I got along fairly well by hiring help to do all the heaviest work, as soon as we could make enough to pay them. I learned to do the studying, the directing, laid out the work, kept every thing in order and moving, and did myself mostly easy jobs, like riding on a spring seat. Thus in due time we succeeded quite well, and the out-of-door employment gave me moderately good health. But after a few years we began to make so much on our little farm that public attention was attracted, and I was urged to write for leading agricultural papers. And about this time farmers' institutes began in Ohio and several other States, and I was asked to help at them. I didn't want to do this work as it would take me from home, and, of course, my farming would suffer as a result. But the demand was strong, and soon I found myself away from home all winter long, speaking two or three times a day, breathing bad air in the halls, living irregularly, often traveling nights, and putting in every spare hour writing articles for the papers. Then on top of this was the constant worry over trying to keep the farm in as good order and producing as well as when I could give my full time to it. I did so want to keep my practice up to my preaching. At home I worked when the weather was fine, and rushed in to write when it rained, as well as at night. This wasn't so much to make money as that all this business had come to me, and I did not like to give any of it up. One hardly needs to tell that the result, some ten years ago, was—

A Complete Breakdown

I had so much ambition and push that I kept driving on after nature had given several danger signals. In fact, I did not consider them at all—hadn't time. The end came when I was in New York. The doctor said I was in a critical condition. But I surprised him by getting up long before he expected,

from sheer will power, and then started for home by easy stages; kept up until I got there, then I was sick indeed. Would gain some at times, then be worse again, until life became a burden that I was really anxious to lay down. Our good old doctor seemed powerless to help me much. I remember writing two articles in those dark days when I was flat on my back, so hard was it for me to give up. My pen had almost to run itself. I hardly knew what I was writing. At last I urged our doctor to tell me frankly if I could ever again be as well as I had been before. He replied that he didn't think I could; that my kidneys were worn out, liver was in bad condition, I had serious prostatic and bladder troubles, rheumatism, piles, etc. He said that he could patch me up a little from time to time perhaps, but there was no chance for a cure; that one should bear these things philosophically, as they came to all and there was no help for it. Now, do you know he could not have said anything that would have done me more real good? Up to that time I had faith in a first-class

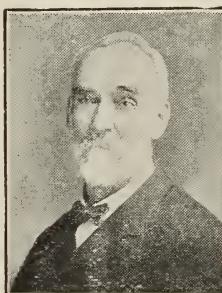
looked so completely beaten that I really felt sorry for him. And he said: "Terry, I don't see how in the world I could have been so mistaken in your case." He was not mistaken. If I had gone on living in the old common way it would have turned out just as he said. Probably 99 men out of 100 would have died just as he laid out for them to do. I was obstinate. I have never recognized any such word as "fail." To-day my kidneys are as good as any man could ask for. Every organ is in ideal order. I have the strong, vigorous, quick pulse of a young man. Have not had a trace of piles, rheumatism, or constipation for several years. In fact, I am sound and well in every way. Breathing, eating, sleeping, working—all are genuine pleasures. I really do not think I ever enjoyed as perfect health before in all my life as I have during the past five years. And, wonder of wonders—

I am Still Gaining

Right living is naturally slow in bringing results; but they are certain, and the best of health will come in due time. Do you wonder that I am enthusiastic? Haven't I earned the right to be? Now, you will find no idle theories or fads in the following pages. I shall tell you what I have done and know. I am going to lead you gradually to improve your ways of living and gain splendid health. Then, barring accident, there is no reason why you may not live long, 20 or 30 years longer than people generally do, and enjoy life fully all the time. Few indeed know what fine health really is. We have slowly drifted away from simple, proper, natural ways of living. As a result we have diseases and ills almost without number, and our lives are much shortened. The truth along these lines has not been realized by many. It has been practically hidden by much that was wrong. But now let us get down to business.

If you are ailing, as most people are, you can cure yourselves same as I have myself, and as thousands of others have done. You can become so well as not to know what it is to have an ache or pain or bad feeling. I will tell you just how to do it. If you are well now, or when you get well, you can keep so by continuing the same simple, natural, healthy way of living. I have long been urged to write a book of this kind, but have held off until years of personal success and study give me the right to speak quite positively. It is my aim to make these pages entirely reliable, a sage guide for busy people who haven't the time to work for years sifting truth from a mass of error. This book is most earnestly dedicated to all the people of America.

T. B. TERRY.



MR. T. B. TERRY
In his sixty-seventh year

physician. I thought he could cure one when he was sick. His words knocked out all of this feeling, and I paid him up, really in pretty good spirits. Why? Well, it thoroughly aroused what little will-power I had left. I said to myself, "I don't know what I will do, but I know that I will not die. I am going to get well in some way."

Where there is a Will there is a Way

I began to study this matter of health and proper living for all I was worth. Of course, I was years slowly working my way up, making mistakes, but gradually gaining. It was with much pleasure that I met our doctor one day years after, on the street. I was stepping off like a boy, just as I felt. The doctor

Mr. Terry's book is now ready for delivery. Price, cloth-bound, \$1.00; or with a year's subscription to "Gleanings in Bee Culture" for \$1.50

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Editorial

Do not forget the National convention, to be held in Albany, Oct. 12 and 13.

THE MICHIGAN HONEY CROP AND THE WILLOW-HERB COUNTRY.

WE have been making a hurried tour through the northern sections of Michigan, taking in the territory about 100 to 150 miles south of Mackinac. In this district more honey has been produced than in the central portion of the State that has suffered from drouth. We have taken something like 130 photos. These will be run through the year, showing bee-keeping in all its interesting phases in what is known as the willow-herb and raspberry districts.

THE ALEXANDER TREATMENT FOR EUROPEAN FOUL BROOD.

ATTENTION is called to the article by Mr. Earl Seamans, in this issue, on the subject of the Alexander cure for European foul brood. So far we have had several reports showing that the treatment is effective, and we have had other reports where it seemed to be an entire failure. Is it possible that these latter have been due to the failure to carry out Mr. Alexander's instructions to the letter? The treatment is a very simple one; and in the cases where the regular orthodox McEvoy treatment has failed to effect a cure, the Alexander plan can be tried to good advantage.

PERCOLATOR FEEDERS.

In this issue our friend Samuel Simmins shows several forms of percolator feeders. If we are correct, this idea has not been exploited to any great extent in America, although percolators to make the syrup apart from the hive or feeder have been used to some extent. A percolator on the principle of the ones shown in this issue would be very handy for outyard work. All that would be necessary would be to carry sugar, and take the water from some nearby spring or well at the yard. Possibly the same kind of feeder could be used to advantage at the home yard, as it would eliminate all possible daub—that is, syrup drippings that might invite robbers. Most of the feeders sold by supply houses could be made over into percolator feeders.

THE LIGHT NON-REVERSIBLE EXTRACTORS; THEIR ADVANTAGES OVER THE LARGER AUTOMATIC MACHINES.

WE have been testing here at Medina and in Northern Michigan a four-frame non-reversible Novice honey-extractor. In actual output it is clear ahead of a two-frame Cowan reversible, and, under some conditions, not far behind a four-frame automatic reversible at almost twice the cost. It has fewer complications, less than half the weight, only 20 inches in diameter as against 29 for the larger automatic machine of the same comb capacity. As the small machine is so much lighter it takes much less power to give sufficient centrifugal force to throw the honey out of the combs.

These little light non-reversible four-frame machines, while not as efficient as the four-frame automatics, are much handier for hauling to outyards, and much cheaper, especially when one has to have a machine at each yard. There are no movable parts except the revolving reel; and this, in the estimation of Mr. Townsend, is a very important feature.

LETTING BEES ROB OUT WET EXTRACTING-COMBS AT AN EXTRACTING-YARD.

Two or three times of late we have entered a caution against letting bees clean up exposed wet extracting-combs in the vicinity of a common highway or in a locality where neighboring dwellings are very close to each other. While we still think the caution is a wise one to put before beginners, we are convinced that, under some conditions, an expert can have his combs cleaned out in this way to advantage. When one has a proper extracting-outfit and a complete power-extracting equipment at his home yard, it is necessary for him to haul the combs from the outyard to the home yard. After extracting he has a load of supers with wet combs. He can do one of two things: haul these combs back to the extracting-yard, put them on the hives to be refilled again, if the flow is still on, or he may place them at the back end of his lot where the yard is located, and allow the home bees to help themselves indiscriminately. Of course, there will be an uproar of robbing for a while, and the bees may be cross, and that is where the danger lies. One can minimize this trouble somewhat by stacking wet supers up in piles, closing all ingress to the supers except at a contracted entrance at the bottom. Of course, in two or three days the combs will be cleaned up and dried, ready to lay aside for the fall.

or winter. While the bees are cleaning up, one can work in the house, leaving it open if he likes, because robbing at that point will be eliminated.

Of course, if one has foul brood in the vicinity, such wholesale cleaning-out of combs is dangerous in the extreme, for practically every colony in the yard will have a hand in robbing out the combs; and should they contain any germs of disease, foul brood will be spread right and left.

A NEW PAPER ON BEE DISEASES.

DR. WALTER MALDEN, of the Pathological Laboratory of Cambridge University, Cambridge, England, has recently published an interesting article entitled "Diseases of Bees," in the *Journal of Economic Biology*, Vol. V., pt. 2, pp. 41-48. Dr. Malden's chief previous work in the interest of bee-keeping has been his investigation of the Isle of Wight disease, which has been known since 1904.

The paper is divided into two parts, the diseases of bees being discussed as those of the larvae and those of adult bees. In his discussion of larvae diseases it is interesting to know that he accepts and uses the names American foul brood and European foul brood, which are now in general use in this country, although they have not been accepted by most English writers. He also states that *Bacillus larvae* of Dr. White is the cause of American foul brood, and calls attention to the fact that Dr. Maassen later named the same organism *Bacillus Brandenburgensis*. In the case of European foul brood he calls attention to the fact that Cheshire's experiments are not quite conclusive, and that the cause of the disease is not known, although *Bacillus alvei* is present.

Under adult diseases Dr. Malden discusses the two forms of dysentery as described by Dr. Zander, May sickness, paralysis, and Isle of Wight disease. Since these diseases are not well understood it could not be expected that this paper could clear up the present confusion entirely.

In the portion of brood diseases particularly, this paper is valuable, as it will help greatly in clearing up the confusion now existing among writers of different countries in the matter of the causes of disease. The clear analysis of work which has been done is much needed, and Dr. Malden's paper is very welcome.

THOSE FOREST FIRES AND BEE-HIVE LUMBER.

CAN'T something be done to stop these awful fires, says every one? There is plenty of legislation, both State and national; but somehow during every year, when a drought is on, there are millions of property wasted, to say nothing of valuable lives lost.

While in Northern Michigan recently we investigated the cause of these disasters, and found that the majority of them were not due to the Indians and hunters, as we

had supposed, but to the railroads and to the farmers. The latter, finding they are unable to burn out a clearing on some of these waste lands (where the lumber companies cut out all the valuable material) except during a drought, with the best of intentions they start a fire, and before they know it it gets away from them, carrying death and destruction in its wake.

We asked if something could not be done to stop such work, and why stringent laws were not passed so no man could be allowed to burn any thing even on his premises except under the supervision of the State authorities. "We already have such laws," said our informant; "but through the laxity of enforcement, or defects in the laws themselves, the forest fires go on just the same." The deplorable thing is that irreplaceable property is destroyed. Millions of feet of beautiful timber are ruined; and the straight shafts of burned trees stand out as mute evidence of barren wastes that were once worth millions.

The awful destruction that has taken place, and is still going on as we write these words, in Idaho, is only a sample of what the country has suffered for many years past. These things occur so often that we become hardened. In the mean time the price of lumber goes soaring after each fire; and, unluckily for us bee-keepers, bee-hive lumber is getting to be so scarce that it is hard to get it at *any* price.

No wonder the public is so tremendously interested in the conservation of our forests; and no wonder it is getting tired of Ballinger. While it would be unfair to saddle on him our forest fires, the public believes, whether justly or not, that somehow he has favored private interests at the expense of the people.

CROP REPORTS.

REPORTS from all sections of the country, except in certain areas, would seem to indicate that a severe drought has been holding sway over a large part of the land. This, so far, has not done any permanent damage to the clovers. If we should get fall rains the clovers would be very much in evidence next year. Reports continue to show that some Western extracted honey will be secured, and that there is a good crop in some sections and a poor one in others. This is also true to a great extent in the large area east of the Mississippi. In some sections of the eastern part of the country there has been a bumper crop of clover honey, and in others a very light yield with all gradations between. There will probably be enough extracted honey, both clover and alfalfa, to take care of the market needs; but there seems to be a scarcity of comb honey.

THE TENDENCY TOWARD THE PRODUCTION OF EXTRACTED RATHER THAN COMB HONEY.

There is plenty of evidence going to show a tendency on the part of comb-honey producers to go into the business of raising ex-

tracted. The reason of this seems to be that there is not enough difference between the market prices on comb and extracted to warrant a continuation of the production of comb, which really costs more to produce than the market quotations would seem to show.

This is something of an indication that the public is beginning to have confidence in extracted honey. The practical workings of the pure-food laws, both State and national, have restored confidence in the product. It is becoming noticeable that extracted has a tendency to rise, while comb has remained almost stationary for many years. This fact has given considerable encouragement to the production of extracted honey. When we consider also that swarming is an unsolved problem in the production of comb honey, and an easy one in the production of extracted, and that the hive and super equipment is much simpler too, it is not at all surprising that there should be a marked tendency toward the relatively cheaper article that apparently yields a larger return for the investment.

**THE M'EVoy OR THE FOUNDATION METHOD
OF TREATMENT FOR BROOD DISEASES;
"NOT A GREASE SPOT LEFT."**

REFERRING to our editorial on p. 509 Mr. Wm. McEvoy, author of the McEvoy treatment, writes:

Friend Root.—The foul-brood treatments are in hot dispute these days, and it is amusing to see how you went for mine in your editorial, Aug. 15. Scarcely a grease spot of my treatment is left. In my treatment of diseased apiaries in the Province I had the brood saved in nearly every apiary until all hatched that would hatch, and from the brood in nearly all apiaries I increased the number of colonies as well as getting all cured. I also made a big success of getting fine crops for the owners. In 1898 I cured an apiary for J. B. Hall, of Woodstock, and saved all the brood that would hatch, and gave him an average of 144 sections of fine comb honey per colony, and his bees had plenty of stores to winter on, and made a perfect cure of every colony. You put it rather strong in claiming that my treatment "in every case means the loss of a lot of good brood"—the very thing I always saved. *Wm. McEVoy.*

Woodburn, Ont., Can., Aug. 22.

It was not our purpose to discredit the McEvoy or any shaking-foundation treatment for the cure of brood diseases. Our only purpose was to draw attention to the fact that the shaking plan ordinarily involved the loss of considerable brood; for in most cases the bee-keeper burns up his brood-combs, frames and all. While it is possible to save a good deal of this brood by using perforated metal, in our opinion the great majority, fearing to take the risk of keeping infected material in the apiary, burn it up as soon as discovered.

Referring to the shaking treatment, variously known as the McEvoy, Quinby, or Jones method, we may say that it is the orthodox method of cure, and until we are absolutely sure of something better, it is the one that foul-brood inspectors and the average bee-keepers should employ. But in spite of this standard treatment, foul brood, both European and American, is spreading in this country—no question about that.

The Bureau of Entomology, Washington, D. C., has enough evidence to prove that beyond question. While it may be questionable policy to publish some of these new treatments, we have done so simply for the purpose of investigation; and if we can discover a shorter or better plan, we ought to do it. If a trade journal like our own were to suppress any knowledge of possible cures there would be danger of getting into a rut and staying there.

**MOVING PICTURES FOR GLEANINGS; THE
PROFESSOR'S READING-MACHINE AND
THE "LONG-FELT WANT."**

THE country is surfeited with literature. Much of it is fair, most of it is poor, and some of it good. We should like to read all of the good, of course; but as one noted college professor once said, "Some enterprising Yankee ought to get up a reading-machine by means of which we could digest quantities of literature which now we can not even look at." While the professor's scheme is impracticable, of course, yet the facetious remark expresses a "long-felt want" for some rapid and quick means of getting *ideas* without the long and laborious process of digging them out word by word and line by line from ordinary reading-matter.

Now, the editors of GLEANINGS hope, in a great measure, to meet this demand by giving every reader of these pages a chance to see how Mr. E. D. Townsend and some other prominent bee-keepers do every thing in their yards. In other words, we propose to give our subscribers a chance to see these men at work as they appear every day in the midst of the honey-flow. We propose to give them a chance to see every step in their manipulations from start to finish. This will be shown by a series of moving pictures—or, more exactly, a set of photos showing each separate step. Each pose will be numbered, with a proper line of reading under each one. Thus it will be possible for the reader to learn exactly how Mr. Townsend works, almost at a mere glance.

These pictures are going to cost us something; but we believe the investment will pay, because the world is full of busy people who can not afford to take the time to read long articles. Of course we shall publish our regular matter as heretofore; but we will use these "moving pictures" to supplement the rest of the journal.

While in Michigan we caught Mr. Townsend and his men in perhaps 75 different poses. There are a lot of little "tricks of the trade" that are shown by these snapshots. An expensive Graflex 4×5 camera costing \$150 was used to do this work; and the reader can imagine, therefore, that GLEANINGS has in store for him a treat.

But this is not all. Arrangements have been made with a number of prominent bee-keepers to secure a series of photos like this, and we are just about to take another trip to secure another bunch of pictures.

Stray Straws

By DR. C. C. MILLER, Marengo, Ill.

A. DEWEY, page 533, says there are often two or three queens piping at once. A number of queens in a hive may be making noises at the same time; but, strictly speaking, is there ever more than one piping? The free virgin pipes, and then is heard in reply the *quahking* of one or several virgins in their cells. [See "Conversations with Doolittle."—ED.]

CHAS. W. HOPSECGET, shade may be best for bees, but your one hive in the shade doesn't prove it. It doesn't swarm, and my non-swarmers are the ones that yield record crops, shade or no shade. Try letting it swap places with one of the swarmers and poorer yielders, and see if the one in the shade does better and the other worse—page 497.

HALF A PINT of carbon bisulphide is advised for a stack of frames six stories high, p. 480. I made effective work with less than half that. [We usually succeed with less than half a pint also; but on one occasion we found some live moths in the honey after fumigating; and as we had every crack stopped tightly, we were afraid that we had not used enough of the bisulphide. Of course, the chemical might have been weak; but to be on the safe side we now use rather more than formerly, hence the advice, page 480.—ED.]

IF BEES breed late in the fall, they are late to begin breeding the following spring. If they stop rearing brood early in the fall they begin early the following spring. So says H. Hesse, *Leipz. Bztg.*, 116. [We question very much whether this is *always* true or even *generally* true. If the conditions are favorable in the spring, bees will rear brood, whether they did any late brood-rearing the previous fall or not. As a general thing a colony will not rear brood in the fall unless it has a young queen or it has been a good fall flow.—ED.]

M. T. PRITCHARD, what possible difference can it make whether a cell is in a cage or out, so long as it is in the same temperature? But there's no use trying to buck against cold facts, and you've made out your case, p. 946. Sorry; but thank you all the same.

Now here's something else that I believe you're just the man for. In the *American Bee Journal* for 1861 we are told that it is 17 days from the laying of the egg to the emergence of the virgin. Most authorities now say 16 days; but Cowan says 15. You please tell us. [We don't know; but we do know that conditions have a large influence. They may all be right.—ED.]

E. F. ROBINSON, p. 516, are you sure micro-organisms have nothing to do with bee-paralysis? *Calling* it paralysis doesn't make

it a disease analogous to paralysis in the human subject. Indeed, Cheshire, Vol. II., p. 570, attributes it to *Bacillus Gaytoni*. But it is doubtful if we know much about it. [We really know less of bee-paralysis than of any other bee-disease. Dr. Phillips has told us, however, that Dr. White will make an investigation of this disease as soon as he determines the cause of European foul brood.—ED.]

SAY, YOU, New Mexico Chap, page 515, please "notice" that I didn't think lack of ventilation was the *only* thing that caused swarming. I said "also." You are quite right that strength and crowding promote swarming; but bees will stand more crowding with ventilation than without it. But my chief grudge at you is for saying that a $\frac{1}{2}$ entrance gives less surplus than a $\frac{3}{8}$ one, and that ventilation retards egg production. If so, my two-inch entrance ought to make bad business. But I ought not to be too cock-sure about how things are your way.

CHALON FOWLS, page 508, has discovered anew the G. W. Demaree plan of preventing swarming, which was published many years ago. At the beginning of the honey-flow put all brood above excluder, or nearly all, and let the queen fill up the lower story afresh. [Chalon Fowls, if you will look again, did not claim the honor of the "discovery." You will see we quoted him as saying that he got the idea from "recent articles in some of the bee-papers." Indeed, we are not sure but he might, at the time, have mentioned the name of Mr. Demaree.—ED.]

SWARMS that have lodged in hollow trees or in walls of houses may be routed with carbolic acid, the crude acid being the better. Upon burning rags in a smoker, drop a few drops of the acid, then smoke lightly at first so as not to stupefy the bees. In a few minutes the bees will issue and settle as a swarm outside. Pounding below the place of the bees will help.—*L'Apiculteur*, p. 283. [This appears to us like a good suggestion. It would almost seem to us, however, that the carbolic-acid fumes would drive out only a part of the bees. If any of our readers have tried this we hope they will report.—ED.]

EARLY this year, my colonies appeared clean of foul brood; later it appeared in some colonies. Dr. Phillips says the usual thing is for it to appear early and then disappear. That looks as if my bees had got the disease again from surrounding apiaries. But I'm afraid some of it was the home product. It appeared in colonies that had been thrown upon foundation as well as others. Only a few bad cells in most cases, and colonies in general were very strong, and stored as I never knew bees to store before, until the terrible drouth stopped them. [You omitted to say, Dr. Miller, that the foul brood that is in your apiary is the European and not the American. What we want to know is whether the Alexander treatment actually effected a cure.—ED.]

OCCASIONALLY some one advocates putting frames of brood over sections. I've tried that and failed, and lately I tried it again for so short a time that I didn't think it would make much difference. But the sections were so darkened that they were knocked out of the first class. I don't know why, but the bees carry *down* bits of the black comb from above much more than they carry them *up* when the comb is the same distance below.

W. FISHER, you say, p. 532, that bees do not fly at the black net of one's veil. But they do in this locality. You're no doubt right that they don't like a hairy surface, and they will sting white, but they have a special dislike to black. I've seen a cluster of cross bees persistently attacking the black head of a large pin in a lady's bee-hat. Certainly it was not the rough surface, for it was smooth glass. [There can be no question that bees are much more inclined to sting dark garments than light-colored ones. Just a few days ago the editor and Mr. E. D. Townsend were opening up some hives in one of his apiaries in Northern Michigan. The day was unfavorable, and the bees were cross. We had on a dark suit, while Mr. Townsend had on a light one. The bees attacked us more furiously than they did him; and the observation was made at the time that it was the dark clothing that attracted the bees.—ED.]

THAT CONFLICT between Stewart and Alexander doesn't look any less to me, Mr. Editor, after reading your footnote, p. 476. You say, "Stewart brings out the point that the colonies must be *very strong* in order to clean out foul brood—that an *ordinary* stock will not do it Alexander, on the other hand, apparently referred to ordinary colonies." You forget. Page 1125, 1905, Mr. Alexander gave as the first step in the treatment to build up the colonies by giving frames of maturing brood or by uniting two or more colonies. That point I have since emphasized more than once, and on p. 144, this year, Irving Grover says, "Mr. Alexander advised making all colonies strong," and the sub head of his article reads, "All Depends on Having the Colonies Strong." Yet with all that strengthening, Mr. Alexander says, GLEANINGS, 1907, p. 166, "You might as well expect to cure American foul brood by throwing a cup of cold water in the grass in front of your hives." [We give up. You are right that there was a conflict of opinion; but Alexander may have been wrong, as he never had much American foul brood.—ED.]

GEO. W. MAXWELL seems to think, page 534, that a super of honey can not be loosened of propolis and all the sections taken out without a ten-per-cent breakage. If there is no misprint in the case, there must be something wrong about the supers or the manner of taking out. I said to my assistant, "In taking sections out of ten supers, how many sections would you expect to be broken?" "Not one," she replied. "We

never expect any sections to be broken in taking them out of supers." [You did not explain, doctor, that sometimes it takes a *little time* before propolis will let go. A slow easy push will crowd sections out of a super when a quick hard push will break a number of them. Of course, something depends on the temperature of the day when the work is being done. In the same way a mule team will start a load, when a fine span of horses will break whiffletrees and accomplish nothing. The mules will bend down to their load and pull steady, while the horses will rush forward with a crash and a bang, and, of course, something has to let go.—ED.]

FEEDING at a distance is highly recommended, *L'Apiculteur*, 274, as being more like a natural flow, and better for the health of the bees. Interesting is the assertion that any particular colony or colonies may be fed at a distance without having other colonies participate. Place the feeder some rods distant—the further the better. Two hours before night, place at the entrance a frame of honey; and when bees have gathered on it put it in a hive covered with burlap and carry it to the place of the feeder. At the same time the next evening they will not need to be baited. [This brings out the fact that a case of robbing is often participated in by not more than one or two colonies in the yard. If it is allowed to continue, the roar will attract the other bees. We know by experience that it is not always easy to start long-distance feeding. We get the bees started by placing the feeder close to the hive; and then when the bees get to work on it a little, carry it (bees and all) to the point desired. If the robbers get started they will follow the feeder as it is being carried; then when it is placed they will go back to it readily.—ED.]

YE EDITOR, page 520, thinks he saw here splinted combs that were built wavy. Have you not got that mixed with another thing, Mr. Editor? When a comb is filled with honey, and sealed, no sign of the splint shows on the surface. But let it be filled with brood, and an elevated line in the capping shows where the splint is, because a cell over a splint must project enough to make it the same depth as other sealed cells. In some cases sighting lengthwise of the comb shows a very slight sagging between splints, but I have never noted a single case of waviness such as mentioned on page 519. [If you will turn again to page 520 you will see that we did not say that we saw wavy splinted combs at Marengo, although in the connection given you might infer so. Our vertical wires are imbedded solidly in the foundation. As you say you see no waviness, it is just possible that the foundation actually slips on your splints because the connection can not be very strong; but it could not possibly slip on the *imbedded* wires, because they are in the base of the midrib, placed there while hot from a current of electricity.—ED.]

Bee-keeping in Southern California

BY MRS. H. G. ACKLIN, GLEN DORA, CAL.

Mr. J. E. Pleasants, Apiary Inspector of Orange County, reports foul brood nearly eliminated from his district. Those people should be happy; also the bees.

Of all the brilliancy I ever witnessed, a full-blown Southern California moonlight night overtops it all. Probably this is not in line with bee-keeping notes, but I think bees might work better on those nights than on cloudy days.

The little workers in the Santa Monica Mountains are doing their level best to get square with the world again. Advices from both Mr. C. C. Schubert and Mrs. D. K. Smith are to the effect that honey has been coming in fairly well the past few weeks.

A bee-keeping friend near Sierra Madre thinks the solution of the problem of eight or ten frame hives is very simple. Have only one width, and that ten-frame, and when an eight-frame is desired, put in division-boards the thickness of a frame on each side. Personally, I think if only ten-frame hives were made, bee-keepers would in a short time consign to the woodshed the follower-boards, and thank their lucky stars for having been obliged to adopt the ten-frame hive.

A bee-keeper near Hollywood has had the misfortune of getting foul brood into his apiary of 210 colonies by feeding honey for stimulating purposes last spring. The honey was bought from an acquaintance, and was supposed to be all right, but dire consequences followed. Ninety per cent of the colonies were treated, with the assistance of the inspector, and there is no surety but the others may have the disease later on. The bees were in fine working condition, and the forage good when the disease was discovered. Just imagine what a loss this brother has sustained, not mentioning the work and worry. Better not feed honey under any circumstances, no matter where it comes from.

Mr. W. R. Wiggins, President of the Los Angeles Co. Bee-keepers' Club, has a unique method for watering his bees. It is an inverted five-gallon water-bottle in its swinging frame set on a box about two feet high. Underneath the mouth of the bottle is placed a granite pie-tin in which is a piece of burlap. Water escapes from the bottle

as fast as the bees take it from the tin. Some salt is sprinkled on the burlap, and this bottle of water lasts his apiary of 110 colonies about a week. Mr. Wiggins' bees are placed in a young eucalyptus grove, and are always in the shade, so the bottle of water lasts them much longer than it would be the same number exposed to the eternal sunshine. This apiary is located in East Los Angeles, just outside the city limits, and did fairly well the first part of the season on eucalyptus blossoms and hoarhound.

A dry season with us means not only no honey and great loss to bee-keepers, but in some instances, at least, death to all queens. In a paper read at our club meeting June 4, Mr. Grenville J. Lynn, of Los Angeles, advocated killing all queens as soon as it was found no honey was in sight—one provision being that the colonies should be strong enough in bees to keep up for a month. The principal advantages he claims for this method are the cessation of brood-rearing, thereby saving from 25 to 50 lbs. of honey per colony, and that there are all young queens to start a new season with. It seems to me I can, with the naked eye, see some disadvantages, so would advise the beginner to go slow on this proposition. Test a few colonies and watch results. But in the meantime let us hope that this wholesale slaughter will not be necessary again for many years.

Instead of putting in so much time, energy, and brain force trying to prevent after-swarming, why not settle the whole problem at one stroke when the first swarm issues? That it is very easy, and can be done, I know from experience; and that it is as practical in this as in other States I have recently learned from an extensive bee-keeper who has practiced the same method for many years. When the swarm is in the air, or very soon after it begins to rush out, so as to be sure it is a real swarm, take the old hive away or simply turn the entrance another way and put an empty hive on the old stand to catch the field bees as they come in. Put the swarm in that hive and take the supers from the parent colony (bees and all) and put on the swarm, giving them an empty super at the same time if necessary, as the swarm must have plenty of room. At your convenience set the parent colony where you want it. The swarming problem has been settled for these two colonies for the season. Sometimes it might be necessary to give the swarm a frame of eggs and larvae from the parent colony if they show a disposition to swarm out; and one can make the parent colony doubly sure by cutting queen-cells; but the last-named precautions are not necessary once in a hundred times. This little piece of information was suggested by the paper Mr. E. J. Barzen read at our June club meeting.

Bee-keeping Among The Rockies

By WESLEY FOSTER, Boulder, Colo.

MORE GRADES OF HONEY.

The trend of the market demand seems to be for more grades in fruit. Most of the fruit associations are adopting this method of packing. I will not discuss whether it is the best way. The way the customers want the fruit put up is the determining factor here. If they will pay more for fruit put up in boxes all of even size and color, that is what we shall have to furnish them if we want the top price. The same thing is true of honey. The grocer wants 24-lb. boxes of honey as near alike in color, filling, and weight as a like number of boxes of breakfast food; and if we can supply him with this kind of honey we shall get the top prices. Four dollars per case of 24 sections can be had in Denver for this kind of honey throughout the year.

THE HONEY CROP.

Another failure will have to be recorded for Northern Colorado. Dry weather and grasshoppers seem to be the principal causes. The bees will average but four or five pounds of honey in the hives at this date, August 4. We are going to feed most of our colonies, and this will give them a good start to keep up their strength during the winter. This is the first season when not a single colony entered a super, and we did not put over sixty or seventy on the best hives that we thought might work in them should the flowers furnish nectar. Fully one-third of the hives have lost steadily in bees during the summer. The lack of a honey-flow seems to tell on the colonies, though there has been a little more than a living for the colonies of fair strength. The weaker ones have a hard time to keep any show of even unsealed honey in their combs. Perhaps a hundred out of our nine hundred have no sealed honey in the brood-nest, and, of course, nowhere else, as that is all they have to store in.

The Arkansas Valley reports some surplus, and the western slope is getting a good crop, as also are Utah and Idaho. Here in Northern Colorado we have just a little more than our share of failures—three out of four is our record for the last four years. But generally the bees have had enough to winter, but not so this season.

SHIPPING HONEY.

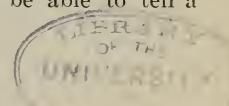
I agree with Mr. Crane, page 443, when he says that express shipments are more liable to breakage than freight. Express packages are handled on end, sidewise, or bottom side up. Then express rates are excessive, and in many places prohibitive. We who favor parcels post look with no too kindly feeling toward the high express rates that are charged, and then when the

shipments are badly broken the companies very rarely allow any claims for breakage. How many damage claims do you know of that the express companies have paid? I have yet to hear of the first one.

Yes, Mr. Crane, there is considerable breakage in freight shipments of comb honey out this way, but mainly when the cases are not crated at all. A good many ship honey this way; but as the breakage continues the practice will stop before long. There is little trouble, if any, when the cases are crated 150 or 200 lbs. to the crate and packed in straw. Speaking of shipping comb honey in glass-front cases without crating, I have noticed that it ships better to leave the glass fronts exposed; for when the glass is covered the freight-handlers do not know which is right side up, and are led to think that it makes no difference. Certainly if six or eight cases crated and packed in straw would not ship without breakage, the 25-case crate of Mr. Crane's would make it difficult for the freight-handlers to get the honey upside down.

HONEY FRAUDS AND COMMISSION MEN.

Those of us who have been favored with some surplus honey to sell are now looking around for a market for our honey. The dishonest commission man is also looking strenuously these days for easy marks. He cares little about the markets. He can quote the market what he wants to, for these fellows always have some exclusive customer to whom they can sell what we send to them at far above the market quotations—that is, they *say* they can in their circulars and post-card bogus quotations which are not quotations at all, but just juicy-looking baits to get us trustful creatures to send them our honey. I believe the larger commission men are reliable, and make prompt remittances; but many of them do not solicit commission deals. They buy outright. These shysters promise the big plums; and then if they get them they keep them for themselves. One of the most common practices among the commission men of average integrity is to send a lot of honey to another commission house to help sell out the lot if the sale is slow. They will take out two commissions of, say, ten per cent each, besides freight and drayage. This I do not consider honest, though it is practiced by quite a few. The Denver market receives honey in sixty-pound cans, and it soon candies. The commission man tries to sell these to the grocers; and as they can buy bottled honey that is attractive and will remain liquid for some time, the sixty-pound cans go begging. This is why some of the honest commission houses can not make satisfactory returns. The shyster, of course, will not make satisfactory returns any way. The rule for all of us is to know the market, and then produce an article that will be in quick demand in that market. Then we must know whom to market our honey through, and be able to tell a shyster by his promises.



Notes from Canada

By R. F. HOLTERMANN

FLOUR METHOD OF INTRODUCING QUEENS.

Mr. Joseph Gray, a well-known British bee-keeper, who originated the method of introducing queens by sprinkling flour, is spending the season with me, with the object of getting an insight into bee-keeping methods in America. A month from now I hope to be able to report my experience with this method of introducing.

A VARIABLE SEASON.

Under the above heading, page 219, *American Bee Journal*, friend Byer describes the Ontario season. Such it surely has been. If bees had been in good shape, no doubt a very large crop of honey would have been harvested. With me the season has not been quite the equal of last year. The flow was never as heavy as last year. This may, however, be the result of scarcity of clover in my section. I sometimes feel that those living in sections where the snow lies deep and long have an advantage over bee-keepers in my own section.

PRICES FOR HONEY IN ONTARIO.

The committee appointed by the Ontario Bee-keepers' Association has met, and, so far as I can learn now, decided that crop and other conditions warrant no material change in the price of honey. The price of most farm produce, particularly eggs, butter, and meat, has materially advanced during the past year. The honey crop, so far as I can judge, is not at all excessive, so that a decrease in price should scarcely be looked for; and owing to a partial failure in the Western wheat crop, the wisdom of an advance would be problematical.

AFTER THE CLOVER-FLOW.

Last season, here, July and August were very dry—so much so, in fact, that bees secured absolutely nothing, and young clover went into winter quarters in very bad shape. This year the opposite is the case. Bees have been gaining slightly; brood-rearing has been going on, and the condition of clover is good. In this section farmers are changing from clover to alfalfa, which does not improve the chance for a honey crop, as it rarely gives enough honey to show up in the brood-chamber. Some will say alfalfa yielded honey in Ontario this year. So it did; but it is not very often that we have as much moisture in the soil as we are having this season. That is why alfalfa yields this year.

BRITISH FOUL-BROOD LEGISLATION.

On page 273, *British Bee Journal*, appears the draft of a bill for the better prevention of bee-diseases. It is proposed to deal with

this matter under the "Diseases of Animals Act." It has puzzled me for years why this matter should not thus be dealt with in Canada. Bees are animals; infectious diseases in bees are even more dangerous to the health of neighboring bees than with other animals who have no wings to carry them long distances. The welfare of many classes is involved in stamping out the disease. The owner of other animals calls in a veterinary surgeon in case of disease if he requires skilled help. Why should a bee-keeper not have the same chance? Why should a veterinary college not instruct students in this disease of animals, and a veterinary surgeon be fitted to detect foul brood and give the help needed for a cure?

COLOR OF VIRGIN WAX.

Louis Macy, on page 223, *American Bee Journal*, in commenting on the color of wax, says: "Doesn't locality or the color of the honey it is made from decide this? Our honey is water-white—from sweet clover and alfalfa; and the freshly made comb is also quite white. I think the yellowing with age is due not only to the heat but also to the bees crawling over it (probably rubbing on some pollen or propolis), as I have observed some little comb built outside a division-board and left alone remained white longer than that built at the same in used frames."

I have noticed that when the bees worked on goldenrod, the combs were yellow from the pollen, and no doubt propolis has a part in coloring wax. Buckwheat honey which is quite dark, however, produces wax in appearance as white as any. Is it not possible that the color of the grains of pollen in the honey from which the wax is produced has an effect upon the color of the wax?

WHY BEES FEAR SMOKE.

Editor York, of the *American Bee Journal*, does not appear to have much faith in the theory that bees have learned by experience to dread smoke through being hunted by natives in their natural haunts. On page 214 of the *Journal* he argues that such colonies have been destroyed, and therefore can not transmit this fear to posterity. I have very little faith in changing the disposition or nature of a strain of bees by environments and conditions. No doubt there is such a thing as the survival of the fittest, but that is quite a different thing. In lands where bees are much tampered with I would expect that there would be a survival of those that would best defend themselves. In civilized countries where we value gentleness, I would expect the gradual development of more gentle bees. Have our bees learned to look upon a dose of smoke in the spring as an indication that a bee-keeper is going his rounds to see if, by feeding for stores or in any other way, he can help the colony along to yield more honey. If not, how many generations will it take to teach them?

Conversations with Doolittle

At Borodino

NATURAL SWARMING ; THE EMERGING OF QUEENS, ETC.

"I am all mixed up on natural swarming. I was told in the spring, by one I considered a practical bee-keeper, that bees would swarm at the commencement of the honey harvest; and that if more than one swarm was cast from any colony, the second swarm would come twelve days later, while if a third swarm came, it would be four days later still, or sixteen days after the first swarm."

"At least forty years' experience tells me that swarming is not conducted like that, unless, perchance, rainy weather has interfered with the plans of the bees, which it could not to such an extent once in a quarter of a century. The rule for all first or prime swarms is that they issue with the sealing of the first queen-cell, queen-cells for swarming being constructed in accord with the prosperity of the colony. And as a flow of nectar from the fields has much to do with this prosperity, all good colonies, not interfered with by plans for delaying swarming, may be expected to swarm during the first half of a good flow of nectar, the sealing of queen-cells telling the day when any individual colony will swarm. Very early swarms do not issue till the hive is pretty well crowded with bees, even to such an extent that a part of the bees are crowded on the outside of the hive; but later swarms may issue before the hives become crowded at all. Now, the pupa remains sealed over in a queen-cell only seven days, on the average; and, after emerging, the queen from this cell becomes strong enough to lead out a second swarm two days later; so the rule is, if the colony continues prosperous the second swarm will issue nine days after the first one leaves the hive.

"About ten or twelve hours after the first young queen emerges from her cell she begins to utter a peculiar sharp sound which is called 'piping,' and this sound can be heard by putting the ear to the side of the hive the evening of the eighth day after the first swarm left, if the first swarm issued according to the general rule. When a young queen commences to pipe I have never known the issuing of a second swarm to fail unless the object of the bees was thwarted by man or by exceptionally bad weather. An item worthy of note is that the weather must be very bad to keep after-swarms from issuing, for they often issue on cloudy days, or at the least streak of sunshine on a rainy day. Then, again, they come out at all hours of the day, from five in the morning till seven at night, while the time of issuing of the prime swarm is from 9 A.M. to 4 P.M.

"If the bees conclude to swarm still further, another queen is allowed her liberty, while the rest are kept confined in their

cells, being fed through holes made by the queens commencing to cut their way out, so they are virtually of the same age and strength as the one which has her liberty. The queen that is let loose begins piping at once, keeping it up for about the same length of time the others did, so that the third swarm comes two days after the second, or eleven days after the first. It sometimes happens that a fourth and even a fifth swarm issues, and in such cases they come out the next day after the issuing of the preceding swarm. But the issuing of all after-swarms is announced by the piping of the queen; and as long as you can hear piping from any hive you may know that a swarm is expected to issue. As soon as the piping of a queen is heard, shake the bees off every comb, and cut off all the queen-cells, for the queens in these cells are the disturbing factors. If you do not miss any, the colony will swarm no more."

"But are there not more queens than one heard piping at times?"

"Yes. To make the matter a little plainer, a young queen may mature and emerge from her cell two or more days before any of her rival sisters come to maturity; but so far as I have observed, she rarely if ever pipes till some of those sisters do mature. As soon as this occurs, the first emerged seems to get in a rage and begins to pipe; and from six to eight hours after maturity, although kept back in their cells, these rivals begin also, often half a dozen answering at a time. This last has been named 'quahking,' I believe, although those in the cells are doing the same as is the one having her liberty, so far as they can in the restricted walls of the cells.

"If any of the queens kept back in the cells arrive at full maturity, and are strong enough when the second swarm issues, they will, during the confusion of swarming, finish biting the cover from their cells and rush out with the swarm. However, it is a rare thing to find more than two or three queens with a second swarm, only one being the general rule. Now, if a third swarm is to issue, the guards collect about the cells again, allowing only one of the mature queens her liberty, and keeping the rest by feeding them as I spoke of before. At this swarming there are fewer bees and more mature queens, so that, when the cell-guards become routed by the hurry and bustle of another swarm, more queens leave the cells. In one case I found 15 in one third swarm, and 20 in a fourth from a Cyprian swarm.

"All queens which can fly on emerging from their cells must have matured from eight hours to a week before, being kept back and fed in the cells by the guard-bees. Young queens will emerge in the nursery cages when they are so white and feeble that they will stagger about like drunken men. But it is no uncommon thing for queens with the fourth or fifth after-swarm to become fertile and laying three days after, if the same swarm is placed in a hive containing combs."

General Correspondence

PERCOLATING OR SELF-ACTING SYRUP-FEEDERS.

Something Invaluable for Out-aparies.

BY SAMUEL SIMMINS.

In the early 80's I was able to offer bee-keepers several feeders of peculiar construction, enabling them to feed without boiling the syrup. One has simply to put in the lump sugar and water, cold or warm as desired, in the proportion of 2 lbs. of sugar to one pint of water; and without any stirring or shaking up, that quantity of water will combine with the lump sugar, forming syrup of the desired consistency for winter storage; while for spring feeding or times of scarcity in warm weather a slightly larger proportion of water will, of course, act more rapidly.

The lump* sugar is raised or suspended in a perforated chamber so that it can not clog or settle in a mass on the main base of the feeder,† and hence in a few minutes it is reduced to the form of syrup of the correct consistency. Syrup cans, as well as large cisterns, were adapted to the same principle; but where used as cisterns for reducing large quantities it is found an advantage to place the sugar in a bag within the metal strainer.

The illustration of the self-acting syrup-can, Fig. 1, will explain the construction of a larger cistern, except that the latter has a honey-valve or top instead of a spout for drawing off the syrup. My circular "Amateur" all-metal feeder, shown in circular

* Neither raw nor moist sugars appear to be desirable as winter feed in severe climates.

† This point is of great importance. If sugar once clogs the floor of the feeder it can not be taken up by the water in the form required.

form, Fig. 2, for use over a hole in the quilt or crown board, is, perhaps, the most remarkable illustration of the perfect manner in which the syrup and water amalgamate, and is a sketch of the very first model that was made to fit my theory that sugar so suspended in water would act in the manner I required.

I have always used the proportion of two pounds of loaf sugar to one pint of water as winter feed, and no granulation takes place, though no acids are used. Where sugar is boiled in making syrup, too much moisture is evaporated, and consequently the food granulates after storing. Hence when I have been frequently asked for my opinion upon this trouble I have always advised that, when made over a fire, the sugar syrup be heated no longer than is necessary for melting the whole by constant stirring meanwhile, to hasten the process; moreover, it is desirable to pour boiling water into the sugar for

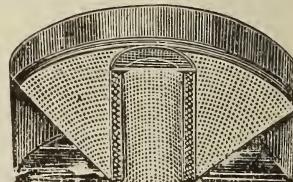
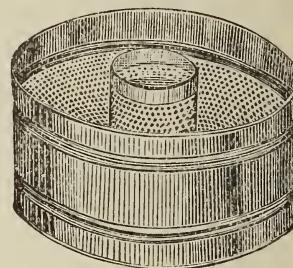
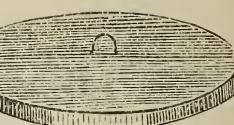


Fig. 2.—Circular "Amateur" feeder, lower part in cross-section, the central passage $1\frac{1}{2}$ in. diameter; and $\frac{3}{8}$ in. space where bees take food all round the center is capped with a glass top.

the same reason where no percolator is used.

Though it is desirable to use water at quite 100° for autumn feeding, I may say that the self-acting feeders answer quite as well (as far as the process is concerned), when cold water is first inserted.

Feeding above the frames, for which my circular self-acting feeder was designed, is largely adopted in Great Britain; but it has never been a favorite way with myself, as I use no holes through the covers (quilts or

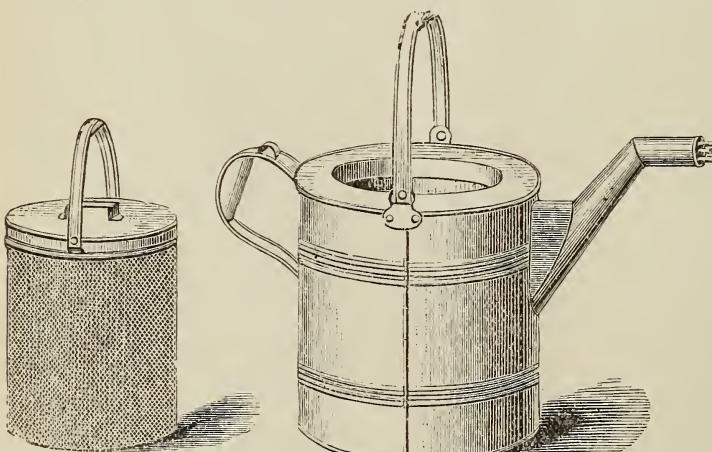


Fig. 1.—Simmins' self-acting syrup-can. The sugar-container (at the left) is held one inch from sides and bottom.

boards) for that purpose. Consequently I also designed self-acting frame feeders after the pattern of my earlier float feeders; but instead of the float a narrow passage was allowed down the whole of one side of the feeder, next the bees—the syrup perco-

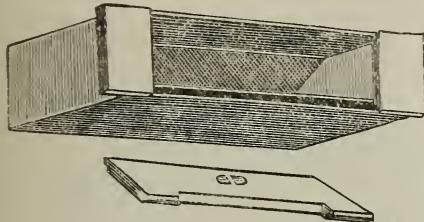


Fig. 3.—Self-acting frame syrup-feeder.

lating through perforated metal parallel to that side, and the sugar also kept from the base (until melted) by a further arched strainer, Fig. 3. Thus the sugar and water amalgamate as in the circular feeder and other styles.

Fig. 4 shows the self-acting principle adapted to a shallow feeder extending over the full surface of an ordinary hive. This feeder is made in two sections, with a bee-

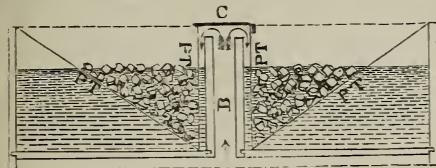


Fig. 4.—Sectional view of Simmins' self-acting syrup-feeders (non-cooking or cold-water process).

passage up from the stock, marked B, and indicated by arrows, the bees taking the food from the secondary passages on either side. The joints are tongued and painted when fitted. The letters PT denote the

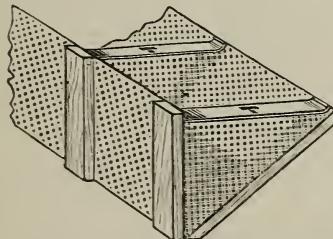


Fig. 5.—The perforated strainer for holding sugar away from the base while amalgamating with the water.

perforated tin, which is stayed by suitable bars, and this part is removable, as Fig. 5. A feeder of this kind will finish any needy stock by once filling, and, of course, can be quickly shifted round to other stocks, so that a limited number will do a lot of work, and all without any trouble in making syrup. Zinc should not be used in feeders of this or any other kind. The accompanying illustrations were first published in my 1886

and 1888 editions of my work, and were in use by me several years before the earlier date.

WHEN TO FEED FOR WINTER.

This is a question that most practical owners have decided for themselves; but in cold localities, or where no honey is gathered after August, there can be nothing but good results to follow when feeding can be finished quickly after that month. In the early 70's I remember securing some condemned bees from a cottager late in the year, and these I fed up in November with a lot of syrup which they failed to cap over. They had no cells empty; and while thus clustered between these combs a few days of frost occurred in December, such as normal stocks would not notice. Upon examination a day or two after the cold spell I found the whole lot dead while sitting upon an abundance of stores.

I never forgot that lesson; and I am fully in accord with the recent remarks of the editor regarding early and rapid feeding in autumn, as the following quotations from my work explain: "Rapid feeding insures a high temperature, and this high temperature insures sealing of the combs so stored; then a dry atmosphere. . . . From that time, without any further attention, breeding will steadily go on until most of the uncapped stores will be used up, and finally sufficient empty cells will be found just where the bees decide to cluster in the usual compact mass."

That is just the point the editor has been insisting on; and where that condition is necessary for successful wintering, early and rapid feeding will always secure it, while there will be just enough brood reared to compensate for the wear and tear of storing.

But there are many localities where it is quite safe, perhaps safer even to feed up late, and the surcharged combs will result in no harm. Even in Canada Mr. McEvoy likes to feed his bees up so that they have no empty cells to cluster in for some considerable time, the combs being solidly capped. Doubtless when wintering indoors in a dry cellar the owner may find no trouble arises where his combs are so filled; or if also they may be largely unsealed, climate and methods of wintering will largely modify the conditions under consideration.

Heathfield, Sussex, Eng.

THEORY VS. PRACTICE IN THE ALEXANDER CURE FOR EUROPEAN FOUL BROOD.

BY EARL SEAMANS.

On page 490, Aug. 1, I notice an article by Alfred L. Hartl, criticising the Alexander plan for curing European foul brood. It seems to me you might use the valuable space in your paper to better advantage than to print such articles from one who says that he has had no experience with European

foul brood. I have read the Alexander book' and, unlike Mr. Hartl, I *have had some experience with European foul brood*. Mr. Alexander fought the disease for years, and after losing a thousand colonies he found a positive cure for it. By following his teachings I have rid my own apiary of the disease. One of my neighbors cleaned his yard of 70 colonies by following the Alexander plan.

Mr. Alexander was a great man, and his writings are of great value.

European foul brood made great headway in this (Wyoming) county last year. Hundreds of colonies died from the effects of the disease. In my own experience I found that weak colonies were not good to clean out combs of diseased brood. The plan I like best is, first, to buy untested Italian queens; second, when the queens arrive, go to your diseased colonies (in the forenoon) and kill the queens; third, in the afternoon (three or four hours after killing the queens) put a caged Italian queen in each hive; fourth, the next day lift out all combs, brood, bees, and caged queen from each diseased hive; put back a frame of brood from a healthy colony, and fill out the hive with clean combs or sheets of foundation; then shake the bees in front of the hive; open the queen-cage and run the queen in with the bees. The frames of diseased brood I put on strong colonies over queen-excluders. The bees soon clean them out, and not one of those colonies I put diseased brood on developed the disease.

Why does not the disease develop in those colonies that I put foul brood on top over excluders? Theory says, "It will," practice proves it will not.

Last spring I had a diseased colony with a nice yellow queen that I did not want to kill. I took out all their brood and combs, giving them a new clean lot of combs. In one month they were full of foul brood again. The queen certainly was to blame there. I have hived swarms that died of European foul brood, and they got the disease. One of my neighbors spent \$30.00 or \$40.00 for queens last year, and put them into diseased colonies, and lost all. This same neighbor last August, during the buckwheat flow, shook all his diseased colonies on full sheets of foundation, and all died during winter.

Factoryville, Pa.

WHAT IS THE COST OF HONEY TO THE PRODUCER?

Should a Higher Selling Price be Expected?

BY F. L. POLLOCK.

Like most bee-keepers I have felt surprised at the fact that honey has not advanced in price correspondingly with other food products, and it has almost seemed that the honey-producer was somehow being discriminated against. It occurred to me, however, that no one seems to have attempted to calculate just what a pound of honey is worth

—what it actually costs to produce it, allowing a fair commercial profit. When I began to make this calculation I quite expected that the figures would show honey to be worth at least 15 cents a pound. They do not quite do that, but they seem worthy of consideration.

Let us take the apiary of a man who owns 200 colonies. If he owns many less than that he can hardly be considered a specialist bee-keeper, for his bees will not take all his time nor afford him a living, while 200 colonies are about the limit of one man's ability without employing labor.

These 200 colonies may be estimated as worth, with all fixtures, about \$1500. An allowance of ten per cent on this makes \$150 annually for interest and depreciation.

During four months of the year the owner will probably spend an average of about six hours a day with the bees, counting rainy days and all, or about 700 hours for the summer. During the eight months of off season he will not work more than 300 hours more, making a total of a thousand hours. Allowing him payment at the rate of forty cents an hour, his own labor is worth annually about \$400. The up-keep of a horse may be estimated at \$150 a year, and a further allowance of \$50 may be made for labor during extracting, requeening, and incidentals. The account stands, therefore:

Interest on capital invested	• • •	\$150.00
Owner's labor	• • •	400.00
Maintenance of horse	• • •	150.00
Miscellaneous	• • •	50.00
		Total . . . \$750.00

Allowing a profit of twenty per cent on this total investment brings the sum up to \$900, which is the amount that the bee-keeper should receive from his crop.

In a fair average locality, taking one year with another, these 200 colonies will store a surplus of at least 50 lbs. of white honey per colony, or 10,000 lbs. for the apiary. A net wholesale price of 9 cents per lb. is, therefore, demanded, or perhaps 9½ cents to cover cost of packages and freight.

When there is a buckwheat flow amounting to as much as 30 lbs. per colony, this price can be greatly reduced, for the fall flow adds comparatively little to the bill for labor. A price of 5 cts. for the dark honey and 7 cts. for the light will make the total receipts \$1000. This may seem dangerous doctrine to publish, and it is certainly unpleasant. I should be glad to see honey maintained legitimately at 12 to 15 cents, and I shall be obliged to any one who will prove my calculations wrong.

But it may be that honey has not advanced in price, simply because it is as high as it should be. In that case the way for the bee-keeper to make more money is not to seek to raise prices, but to keep more bees, to coöperate for a systematic, businesslike handling of the crop without glutting the market, and to develop the trade by suitable coöperative advertising, as other food-producers do.

Stouffville, Ont., Can.

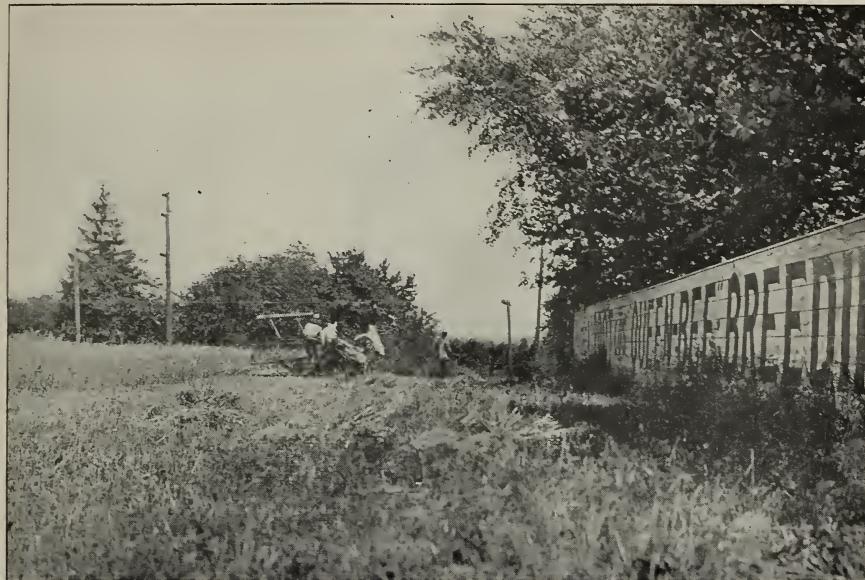


FIG. 1.—CUTTING OATS CLOSE TO AN APIARY.

The flight of the bees, on a line with the top of the fence, encountered the revolving reel of the binder.

BEES ATTACKING A SELF-BINDER RIG.

Some Experience at The Root Company's North Yard.

BY E. R. ROOT.

A few days ago we received a telephone message from a farmer, saying that our bees were attacking his man and horses operating a self-binder that was cutting the grain next to our line fence. We sent a man down, and found, true enough, that the bees going to and from the yard were attacking both man and horses. There had been a little rain the night before, and the nectar

secretion had stopped. Apparently the bees had gone to the fields as usual, and, not finding any thing, returned to the yard not in the best of humor. As the self-binder approached the line fence next to the bees the revolving arms of the binder-reel through the mass of flying bees seemed to infuriate them. While they did not attack the horses enough to make any serious trouble, their owner, a good friend of ours, thought best to notify us, as we had told him that any time he had trouble we would come down if he would let us know.

The bees had already stung the driver and the horses; but so far he was handling them without assistance. After looking



Fig. 2.—Rear view of the binder and horses, the latter wearing blankets to protect them from stings.



Fig. 3.—When the team was in the flight of the bees the smoker was held in readiness should the horses be stung.

over the situation we decided to send down one of our best bee-men who was also an expert in handling horses. He was equipped with a Jumbo smoker, prepared to make a big smudge. The owner had already put on his horses large horse-blankets of a porous texture which we supplied last year. The driver was provided with a bee-veil, and then our man was given instructions to follow the team along that side of the field next to the bee-yard, so that, if any trouble should develop, he would be able to render assistance to the driver. Thus prepared we were able to handle the situation very easily, and in the course of a couple of hours nectar began to secrete, and the bees went merrily on to the fields without molesting either man or beast.

The large coarse-netting blankets protected the backs and necks of the horses. The rear flanks they could take care of with their tails, while a bee upon the face of the horse could easily be brushed off. Apparently bees seldom attack the legs or the under side of the animals, so that about all that is needed is a good-sized blanket with coarse mesh so as not to be warm.

Fig. 1 shows the high board fence next to the bee-yard on the right, the self-binder and our man clear to the end of the row. Fig. 2 shows a nearer view of the whole outfit just as the team was about to turn the corner; Fig. 3, the position of the man up near the heads of the horses.

Strangely enough, the bees seemed to quiet down after the man came. The trouble seemed to be more aggravated when the team was close to the line fence on the first round. As the grain was cut, the team would walk further and further away from the concentrated flight of the bees, hence the trouble would minimize as the day wore on.

While, perhaps, it may not be good policy to tell about bees stinging horses we think it is the province of a bee-journal to warn bee-keepers, and to show them how a situation of this kind can be handled in order to avoid damage suits, to say nothing about broken machinery and possible loss of life.

In view of former trouble we have about decided to move our bees late this fall away from this line fence and place them near the back end of the basswood orchard. At this point there would be no open field. The difficulty in our case seems to be because some 60 or 70 strong colonies are massed right along next to the high board fence. The concentrated flight just as the bees reach the fence seems to cause trouble when a rapidly moving object like the binder-reel passes through them. On the other side of this same bee-yard there is an open pasture lot on lower ground. There is never any trouble there, because the yard is located on high ground; and the bees, in passing, coming to and from the yard on that side, fly high above any horses or cattle; but in the view here shown the ground is higher, if any thing, than the bee-yard. The bees fly low, or just high enough to clear the grain. When, therefore, horses with switching tails and rapidly moving machinery pass through them it is apt to cause a little disturbance, especially if the bees are in bad humor in consequence of the honey-flow having just been shut off.

Heavy Wire for Supporting Foundation.

I have been using baling-wire for splints for the past two years, with good success. I use the wedge top-bar; insert wire with foundation in the groove; drive in the wedge, and wax the wires down with the Van Deusen wax-tube.

Metz, Cal., July 8.

H. E. THAYER.

**ANOTHER VISIT WITH CHALON FOWLS
DURING THE EXTRACTING SEASON.**

Some Further Improvements in Capping-melters.

BY H. H. ROOT.

Our readers will recall that two years ago we spent considerable time with Mr. Chalon Fowls at Oberlin, Ohio, helping him extract and experimenting with various new melters. Our report of these experiments was given in the Nov. 15th issue for 1908, page 1375. We have been continuing the work this year, and Mr. Fowls now believes that he has almost an ideal equipment for rapidly extracting honey. On account of the somewhat crowded extracting-room it was almost impossible to locate the camera so as to get good interior views, but they serve to show something of the arrangement of the apparatus.

Mr. Fowls still uses his gasoline-engine, or, rather, his daughters use it, for they do perhaps the larger part of the extracting. This engine, by the way, although having been used for pumping water, off and on, during the winter months, is as good as new. New batteries have been put in two or three times, of course, and one new spark-plug bought. Fifteen minutes' work in tighten-

ing the bearings, etc., made the engine run even better than ever.

This year we have been making some experiments with a capping-melter made after the Peterson plan, first described page 559 of the May 1st issue, 1908. Some modifications have been made from the original plan, for the purpose of simplifying the outfit and enlarging its capacity. Fig. 1 shows the melter in position under the uncapping-table. There is nothing to the melter except a long shallow pan with a double bottom, and a trough opening from one end to allow honey and melted wax to run out, this end of the opening being about an inch lower than the other end, into which the cappings fall. An opening into the water-space is left at the upper end, large enough for a couple of knives if one desires to use a knife kept hot by hot water. This opening is also for the purpose of filling the melter with water. A two-burner oil-stove stands beneath the melter at the lower end, and the hot water heats thoroughly the large surface represented by the bottom of the pan. The cappings and honey, no matter how fast they drop from the combs, even when two are uncapping, begin to slide directly toward the lower end; and by the time they pass out of the trough the wax is melted. The honey and wax are not confined at all, and they pass a way from the heat in the smallest possible time. We have found that this construction of melter does not darken even the whitest basswood honey in the least.

If two uncappers are working, both burners of the stove should be used; but if there is only one operator, one of the burners may be turned down, or possibly turned out altogether. The large surface presented affords a capacity for melting cappings large enough for the most extensive producer.

The illustration shows further that the top of the table is so constructed that there is room for a large number of uncapped combs over the melting-pan, the honey that drips from them being thus



FIG. 1.—THE MODIFIED PETERSON CAPPING-MELTER AS USED AT OBERLIN.

The long pan under the table has a double bottom, the space between filled with water kept hot by the stove underneath. The wax and honey run out of the trough, away from the heat, in the shortest possible time.

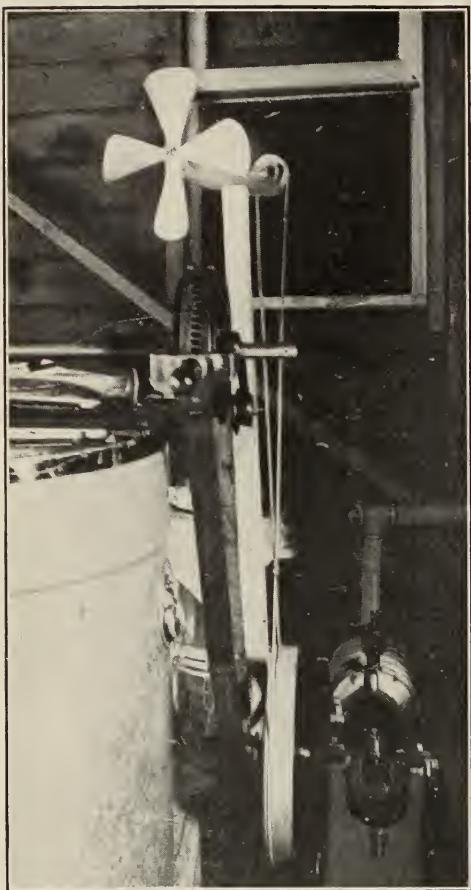


FIG. 2.—THE FAN USED TO COOL THE EXTRACTING-ROOM.

An ordinary sheet-metal fan is attached to a short shaft and run by a round sewing-machine belt from the fly-wheel of the engine.

taken care of without extra apparatus. If more than a thousand pounds of honey is to be extracted in a day, it pays to have a good large table on which to work, and it is certainly a great advantage to have one end of this table arranged according to the McIntyre plan for holding the uncapped combs.

HOW TO KEEP COOL.

When the weather is hot, several have mentioned that it is rather disagreeable to work over a capping-melter on account of the heat from the stove underneath. As it was very warm while we were working we arranged a small fan, run by a round belt from the fly-wheel of the engine. This fan was turned toward the uncapping-table, and there was no longer any thought of hot weather; in fact, it was much more comfortable in the extracting-room than anywhere else. At first we had the fan running too fast, and the blast of air was actually too much of a good thing, so we reduced the speed until it was just right. Fig. 2 shows how the fan was attached to the engine on the 2×4 bolted to the engine-base. The fan itself is made of sheet brass, and is similar to those used on small electric motors. There is no reason why a local tinsmith could not make one very cheaply out of galvanized iron, provided the blades were of equal size so that, when running, there would be no vibration due to lack of balance.

A GRAVITY STRAINER LOCATED IN THE BASEMENT.

In former years Mr. Fowls has used 75-lb. lard-cans for storing his honey, filling the cans under the strainer, which was located near the extractor. This year, however, the honey-flow was so heavy that there was no longer room for storing this honey in the extracting-room, and so, at an expense of about four dollars, a three-inch galvanized-iron conductor-pipe was run from the extracting-room to the basement of the dwelling-house some forty feet distant. Figs. 3



Fig. 3.—The pipe used by Chalon Fowls to convey honey from the extracting-room to the settling and straining tank in the basement of the dwelling-house.

and 4 show the amount of "fall" of the pipe and the general arrangement of the buildings. A settling-tank arranged after the plan described by E. D. Townsend in the *Ree-keepers' Review*, and mentioned in the July 1st number of GLEANINGS, page 402, is located so as to catch the stream of honey from the pipe. Mr. Fowl's believes that this settling-tank will serve in lieu of a strainer, although he is not quite certain as to the results as yet, since he gets the bees out of his supers by means of bee-escapes, so that the honey, by the time he extracts it, is no longer warm. Mr. Townsend brushes the bees from the combs, and extracts while the honey is still warm. Until using this settling-tank Mr. Fowl's had considered the Alexander strainer ahead of any thing that he had ever tried before. No one, who has never tried conveying honey away from the extractor by means of a pipe, can realize what a convenience it is. It is almost like extracting honey without having the honey to bother with.

THE STEAM UNCAPPING-KNIFE.

If new combs are uncapped, the steam-knife is certainly a great advantage. Mr. Fowl's, however, does not extract to any extent from combs until some brood has been reared in them to stiffen them. When a set of extracting-combs are thus used over and over, the midrib, or main part of the comb untouched by the uncapping-knife, becomes hard and tough, and the new fresh comb outside and the cappings are then very easy to remove with a cold knife. Under such ideal conditions there is probably no great advantage in the steam-heated knife.



Fig 4.—Another view of the honey-pipe. The distance is about 40 feet, and the pipe, being made of galvanized iron, cost about \$4.00.

A NEW BEE-VEIL.

Sometimes an old veteran in bee-keeping boasts of the fact that he never notices whether he gets stung or not; but Mr. Fowl's says that the more he works with bees the less he likes to be stung. He has never been entirely satisfied with any of the bee-veils that he has tried, and accordingly he constructed one that suits his own particular requirements. Fig. 5 shows the construction of the veil. A shirt is first put on, which is made of common denim, and this is worn over the ordinary shirt in place of a coat. As will be seen, it is gathered about the waist with a string, and a stout wire hoop is firmly sewed into the material around the neck to take the place of a collar. The veil has a rubber cord around the bottom; and when this is pulled down over the wire hoop, the tension of the cord keeps it tight enough so that there is not the slightest possibility for a bee to get in. Another rubber cord keeps the top of the veil tight around the crown of the hat.

There are a number of advantages in this veil, which do not appear at first sight.



FIG. 5.—MR. FOWLS' NEW BEE-VEIL.

The rubber cord at the bottom of the veil pulls down over the wire hook which takes the place of a collar on the over-shirt.

First, it gives perfect freedom for the movement of the head and arms, and it also provides shade for the back of the neck; for the back of the veil, instead of being constructed of the netting, is of white cloth. Second, the veil can be instantly raised or lowered, as there are no strings or pins to bother with. The second view shows the veil thrown up over the hat out of the way, and the third shows it removed entirely from the hat.

LOCAL ADVERTISING BY BEE-KEEPERS.

How should Honey Advertisements be Worded?

BY A. F. BONNEY.

It is an axiom in the advertising world, that, to make advertising successful, you must have something to sell; that something must be a thing already in demand, or for which a demand may be created—something good to eat, drink, wear, or in some other way enter into the economies of modern life.

It is, to the bee-keeper, a lamentable fact, that, while all other articles of food have gone up in price, honey has not; that it sells, generally, for about the same price it did ten or twenty years ago, judging by what we read from the pens of the older men engaged in the craft. Several reasons are given for this, one being that it enters directly into competition with the syrups, cane, sorghum, and the messes made from corn starch, and allowed to be called syrup by an idiotic decision of the powers that be. This may be true, but I doubt it; and lately the idea was impressed on my mind when I said to an old farmer customer:

“John, let me sell you a five-gallon can of nice clover honey.”

He scratched his chin, meditated a moment, then said in reply: “I like honey,

and so do the rest of the family; but *we do not like it all the time.*”

I have been studying on advertising for my own crop, trying to formulate an advertisement which would sell my honey, and I noticed that the members of my own family do not eat honey all the time; but why, I can not imagine. Even in my own case, as fond of the sweet as I am, there are times that I care actually nothing for it; and I incline to the opinion that the general public is the same; and with this difficulty presented I think I know how to write a honey advertisement.

It is hardly a tenable theory that everybody will want or not want honey at the same time; therefore an advertisement which will appeal to the public at one time will all the time. This applies to other things than honey; and, no matter what your advertisement is, be it large or small, plain or in colors, with your portrait or without, the fact that *somewhere somebody* wants honey calls for a continuous string of advertising—something which everybody will see all the time, so that, when they want honey, they will want *your* product; and to that end *you must have a distinctive name for your goods*, and that name must be something agreeable, something which will point to yourself, something suggestive of honey. It must be true, for nothing is quicker overtaken by retribution than a lying advertisement. You can not fool enough people with it all the time to make it pay its cost.

Another axiom in advertising is: What will please a large number of persons will very likely please everybody. A big black cross followed by “John Smith’s Pure Comb Honey” would not make a good advertisement, because suggestive of mourning; but make the cross crimson or gold, and it would probably pass; however, a nice picture of a honey-bee would be far better, while for local or county trade the bee-keeper’s portrait

in connection with a short, well-worded advertisement might be just what was wanted; but, no matter how well an advertisement is written, how nicely it is illustrated, if it is run but once in a while, by fits and jerks, the bee-keeper will probably decide that advertising does not pay, and he will be right, from his view-point.

What, let me suggest, can be better for an advertisement or label than a man's name in connection with the word honey? I am getting ready labels to read:

PURE EXTRACTED
BONNEY HONEY
From the Bonney Apiary,
Buck Grove, Iowa.

For a standing advertisement I shall use an inch space to run all the time. This will cost a matter of \$5.00 to \$6.00 a year, and the printer takes his pay in pure Bonney honey.

It is my humble opinion that spasmodic publications of small or large reading notices as to the value of honey as a food, cosmetic, or medicine will not pay, because the public will not read them, would not understand if it should, and does not believe so soon as the fact crops out that it is an advertisement; and unless the printer can be persuaded to run the advertisements as "cheap copy" it will cost a great deal. From talking with three or four gentlemen who keep bees I find that they never advertise, and never use even a label, but dispose of their crop by peddling and in the local stores. One of these men has 90 colonies.

That the demand for honey may be permanently increased by judicious advertising I do not doubt, because in some places sections which will not weigh more than 14 ounces retail for 20 to 25 cents, and in large cities possibly more. Even in this rural hamlet I get 15 cents, or two for 25 cents, and have, ever since I began keeping bees, got 10 cents a pound for extracted honey, though I am now selling in 60-lb. lots at 9 cents, and this with practically no advertising. I intend next season to increase to 100 colonies, and hope by advertising to be able to sell locally the bulk of my crop, and thereby get a little better price than if I were to ship.

Buck Grove, Iowa.

A Bird that Sucked the Honey from Bees.

On June 4, while among the bees I was attracted by a humming noise which sounded strange although familiar. It was a hummingbird catching returning workers. I watched this performance for at least five minutes, and then the little outlaw flew away. Upon examining the victims I found a tiny hole on or in the under side of the bee, directly over the honey-sac. Why and how this bird learned this trick I do not know; but I do know that it or another bird very much like it returned to the same hive the next day, but flew directly away.

Montpelier, O., July 21.

G. W. JOICE.

BEES AND COLOR.

A Study of Different Races of Bees.

BY G. W. BULLAMORE.

Some years ago the Italian bee was largely imported by southern-English bee-keepers. Carniolans also were tried by many bee-keepers who had heard of their non-stinging disposition. At the present day almost all English black bees show a trace of foreign blood; and if outward traces disappeared entirely I should be chary of supposing that all foreign qualities had disappeared. Hundreds of lots of driven bees are yearly sent to Scotland and to the north of England, so that this type of bee must be general. It is a black bee in the sense that the "Red Bones" of South Carolina are American Indians.

Dr. Miller is probably right when he suggests that the black bee of England and Scotland differs from that of America.

On many debatable points it is difficult to decide what is due to the strain and what is a characteristic of race. A few years ago a writer in the *British Bee Journal* described his Ceylon experiences. He found that his black bees disappeared because they settled on the alighting-board and then ran into the hive. The lizards would crawl on to the board and gobble them up as fast as they settled. He then tried some Italians, which, by flying straight into the hive, escaped annihilation.

Inspection of my own apiary showed that some of the "blacks" alight on the board and run in, but that others fly straight into the hive. As I have no black bees whose pedigree is devoid of suspicion, the observations are worthless. The characteristic may survive in some of my bees as an inheritance from a remote Italian progenitor. Such a protection against lizards may be an absolute necessity in Italy. In England it is not required.

On theoretical grounds one would imagine that the Italians were more highly educated in dealings with the wax-moth. In cold districts many of the wax-moth pupae are killed during the winter, and the survivors are able to produce only a couple of generations before winter again arrives. In warmer climates the weather does not help the bee, and it is obvious that the resisting power of the bee must be increased accordingly.

In all arguments, however, it seems to be assumed that color itself is absolutely valueless. I am inclined to look upon it as possibly an adaptation to environment upon which further evidence is required.

The native habitat of the yellow bee is warm open country where the wild swarms take refuge in clefts of the rock, etc. The black bees are normally inhabitants of cold regions or of densely wooded forests and jungles.

Mr. F. W. L. Sladen, in writing of the honey-bees of India, gives several instances of light and dark varieties of the native

bees which show that the coloration is correlated to climate.

In the Klasia Hills a dark variety of *Apis dorsata* occurs. It is known as *Apis zonata*. *Apis florea* is represented by a black variety in the valleys of the Eastern Himalayas. *Apis Indica* is a golden-yellow bee whose place is taken in the hill country by a larger and black bee "which possibly is a variety of it. This black bee occurs throughout the Himalayas to a considerable elevation, and can evidently stand a good deal of cold."

I do not think that this alteration of color with altitude can be quite meaningless. It would be interesting to know if the supporters of the black bee in America are located entirely in the colder districts, and if Italians that escape to the woods are able to make headway like the black bees. If each race is at its best under a different set of conditions we shall learn very little as to the value of Italian bees in California from the experiences of a bee-keeper located just outside the Arctic circle.

Albury, Herts, England.

THE SUMMER MEETING OF THE NEW JERSEY BEE-KEEPERS' ASSOCIATION.

Foul-brood Laws Criticised; the New Jersey Association Joins the National in a Body.

BY ALBERT G. HANN, SEC.

The annual meeting of the New Jersey Bee-keepers' Association was held at Mr. Charles Howell's apiary, Hackettstown, N. J., June 29, 1910. The meeting was called to order by Pres. Cook, who made a brief opening address in which he expressed his appreciation of the fine day and place for the meeting, and particularly for the hearty welcome given the State Association by the bee-keepers of Hackettstown, and by Mr. Howell in particular.

A short business session was held, in which the minutes of the last annual meeting were read and approved. How to get in closer relation with the State Board of Agriculture was discussed.

Dr. John B. Smith, State Entomologist, gave an address, "Foul-brood-inspection Laws." He criticised all the foul-brood laws of all the States. He said they give too much power to the inspector, and that none of them contain any right of appeal from the decision of the inspector. He criticised the recent bill passed by the New Jersey legislature in this respect. He said if it got into the courts, as it surely would, it would certainly be declared unconstitutional, and would have to be re-enacted, containing such provisions. Dr. Smith also made a few remarks on how to facilitate closer relations between our association and the State Board of Agriculture.

A committee of four was appointed by the chair to facilitate closer relations with the State Board of Agriculture. Wm. A. Selser,

Harold Hornor, Wm. E. Housel, Albert G. Hann, are the committee.

The Governor's veto message to the recent foul-brood law was read. His specific objections were against making the offense a misdemeanor by refusing or neglecting to treat foul-brood colonies. He thought the offense too slight to be a misdemeanor.

Mr. Harold Hornor gave a talk on his method of producing extracted honey. He uses the eight-frame hive exclusively—two bodies as brood-chambers—previous to the flow. He queenens all his colonies annually. He confines the queen to the lower brood-chamber by an excluder after the flow is well advanced.

In the afternoon Mr. F. J. Root, advertising manager of the *American Grocer*, New York, gave a talk on advertising honey. Mr. Root's talk was a good one, and was practically the same as appeared in GLEANINGS July 1, page 410. Turn back to it and read it again.

A short paper by E. S. Carr was read, "Shall the New Jersey Bee-keepers' Association Join the National Bee-keepers' Association?" He favored the move, first, because of the measure of protection it affords the bee-keeper in his legal rights; the saving to the bee-keeper of the extra dues by joining separately; the literature each member of the National receives. The paper was followed by some discussions; and then a rising vote was taken. The motion to join the National was carried unanimously. The dues were raised to \$1.00; fifty cents goes to the State association, and fifty to the National. Every member who now joins the State association joins the National.

We should like to urge every reader of GLEANINGS in New Jersey to send us \$1.00 and join the State Association and the National. Every one who does so before October will receive the following: The 1909 National Report; membership button; Legal Rights (pamphlet); Bulletin No. 15; price list; postal receipt with seal label "member."

The next was a talk on "Comb Honey," by Ralph Fisher. He lays particular stress on selecting and breeding queens. He is also particularly careful in trapping all undesirable drones. But he has a particularly good method of managing swarms. When a swarm issues he hives it in a ten-frame L. body and sets it beside the parent colony. In four or five days he adds another super to the parent colony; puts over this a Foster bee-escape, and allows the bees all to go down in the parent colony. In two days he removes the top brood-chamber with the queen and a few bees, and unites it to a weak colony. This method keeps all the field workers together.

The last was a paper by Edward Diener, "Bee-keeping in the City." Mr. D. gave a rather humorous but interesting talk on the trials of city bee-keeping. The most serious trouble is in the spring when bees take their cleansing flight. But bees can be kept successfully and profitably in the city.

At 3:30 P.M. the meeting adjourned, subject to the call of the Executive Committee. Pittstown, N. J.

DEATH OF A. J. KING.

Former Editor of the Bee-keepers' Magazine, Author of "Bee-keepers' Text-book," etc.

BY W. A. PRYAL.

Our good old friend, A. J. King, is dead. He died at his home in San Diego, as you have probably learned, June 24, of valvular heart disease. I presume it was really a general breaking-down of his system from the infirmities of age, in his 75th year, that carried him off, as I had heard from him some little time before he died that he had a stroke of paralysis. I first came to know Mr. King at the close of the spring of 1866. About the first of July of that year he opened our new district school in this neighborhood. He left here some time in 1868, and never revisited this part of California, though he was on his way here two years ago when he received word to hasten home, as his daughter had died suddenly. It was one of my cherished wishes to visit San Diego this year, and to have again the pleasure of seeing the schoolmaster of my boyhood days. Just think! both are now gone, and I trust they are in a far better world.

I look upon those notices I had given of Mr. King in GLEANINGS and the *American Bee Journal* as the best services I ever rendered a friend. I am sure the venerable bee-keeper's closing days must have been made brighter by having some of the bee-papers that were cotemporaries of his in the olden days give place to appreciative notices of his labors in the bee-domain, so to speak. Few indeed are the pioneers of American apiculture that are left. It seems to me that some one should write an unbiased history of those pioneer times. It would be history that American bee-keepers a quarter of a century from now would delight to look back upon. There will then be no one to tell of those pioneer times, except, perhaps, in a traditional sort of way.

Oakland, Cal.

[On page 705 of our issue for Nov. 15, 1909, will be found a life-sketch of Mr. Albert J. King. I had much correspondence and quite a little deal with both the brothers, A. J. and H. A. King. From the account above referred to, it seems the *Bee-keepers' Magazine* and GLEANINGS were started about the same time; and although we were rival editors for quite a number of years I am glad to state that friendly relations always existed between the two journals. After A. J. King went to Arizona it was my pleasure to make him a visit out in the desert; and while I was in Cuba I visited a large apiary that was for some years managed by Mr. A. J. King. He was, during all his life, connected more or less with bee culture and bee literature. As friend Pryal

has suggested, it must have been a pleasure for him to see two of the bee journals of America recognize and make mention, not long before his death, of what he had done to give modern apiculture the place it now occupies.—A. I. R.]

A MOST REMARKABLE INCIDENT OF SWARMS ENTERING EMPTY HIVES.

BY CALVIN S. HUNTER.

One of your correspondents speaks of a swarm of bees that moved over to a better hive. This encourages me to give a little of my experience that was entirely new to me, although I have handled bees for over fifty years, part of the time under the care of Rev. Mr. Langstroth when he was introducing his movable frame. Last fall I had five nice swarms in good hives; but, as was the case with nearly all the bees in our neighborhood, they all died. One man with 35 swarms did save four of them; but I could not buy of him, so I thought I would rest awhile and take a new start later. So this spring the dead bees were carefully swept out, and the hives set to one side. The lot was planted to potatoes, one row within two feet of the front of the empty hives. It seemed strange to run the plow against the front of a spot that had been sacred bee-ground so long; but I did not set the hives away, thinking a swarm might come along and I would be like the boy that was not ready when it rained mush and milk.

The potatoes were laid by, and the very sight of a lone bee would have been a curiosity when my wife heard the sound of a swarm in our dooryard. As soon as I got home I went straight to look after the empty hives, and found the bees had taken possession of the first cap. I thought this a happy incident, and tried to persuade myself I had heard of the like before. Next day I went to look after them, and found another large swarm occupying the second hive. Well, I thought this a mere coincidence; but I asked our folks what kind of people usually had good luck.

Next day I looked after the two and found a third swarm in the third box. When I told my wife of this you should have seen how she looked at me. She was either anxious as to my sanity or else she wanted to see if I had the countenance that George Washington is supposed to have had when he was testifying as star witness in the famous cherry-tree case. But truth is mighty; and, any way, she had to stand back from the third swarm of bees.

The fourth day I drew a blank; but the fifth day the fourth swarm took possession of the fourth hive, all running the business themselves, and I just "let 'm." I was like the Irishman riding a frisky mule. When the mule got his foot in one stirrup he climbed down, saying, "Well, if you are going to ride I'll just walk." These were all Langstroth hives, with one super each left on

last fall, for not one pound of honey was taken from the five stands, and a little poor honey-dew was all the summer afforded. Come and see; or if any of your friends can duplicate this performance I should like to correspond with them.

Seven Mile, Ohio.

[If our correspondent were not the celebrated "corn-man" we should most certainly doubt his veracity. The case is indeed remarkable, and we believe Mr. Hunter holds the record.—ED.]

SELLING HONEY IN CITY MARKETS.

Stalls in Market Places Preferable to Grocery Stores.

BY ELMER J. WEAVER.

There have recently been several articles on the subject of marketing honey, each of which has been of value, since the experience of many in different sections of the country, describing methods of selling at good prices in local markets without shipping to large centers, is a great help toward holding the market firm. Honey is not considered a necessity by the majority of citizens, like vegetables, etc.; but it is from the vegetable-market standpoint that I wish to treat the subject.

My chief occupation is growing carnations for cut flowers during winter. During the spring, each season, a large lot of tomato-plants are set out among the carnations. These ripen four to six weeks earlier than outdoors in this section. The marketing of tomatoes in Lancaster, a city of about 50,000, at a price ranging from eight to fourteen cents per pound, in competition with tomatoes from Florida and Mississippi, has given me a good opportunity to study the markets, as it requires a wide distribution to hold these prices and dispose of a ton or more each week. Being very much interested in bees and bee-keeping I have been watching the marketing of honey also. Nearly all the vegetables sold in Lancaster are produced by farmers and truck-gardeners living within hauling distance of the city, the produce being taken to the various markets, of which there are six. Stalls are rented all winter to each farmer, who sells his produce direct to the customer. These same conditions probably prevail in many cities of the United States. Instead of making an effort to retail my tomato crop, which requires a low price to dispose of any quantity at one or two markets, I distribute them among eighteen to twenty stall-holders in the various markets, and also among the best grocers in the city. In this manner I can realize the price mentioned above, and the retailer easily makes a good commission. I find that the grocers in Lancaster sell very little honey. The leading one usually has honey in the store; but a customer has to inquire for it in order to know whether there

is any in stock. On several occasions I have asked him how honey sells, and he has replied that good extracted honey sells fairly well in jelly-glasses, though not so readily in special honey-jars, as the outlay is less, for one reason, and then the jelly-glasses can be used for a variety of purposes. At this store a limited amount of comb honey is sold, though it is rarely displayed in an attractive manner.

I consider the market the best place to dispose of honey, there being several parties that I know who sell quite a quantity at good prices. To one of these I have sold extracted honey at 10 cts. a pound in lard-cans, and he furnished the cans. He sells the honey almost exclusively in jelly-glasses, as his customers prefer it that way. This same man sells over a ton of comb honey each season at 20 cts., the price of extracted being usually 12 cts. a glass, the same as the tomatoes mentioned above. The stall-holder in the market has more chance to display honey conspicuously than the ordinary grocer has, as the variety of goods offered for sale is infinitely less than in the grocery.

Customers going to the grocery store usually have a list of goods that they want; and unless they are regular consumers of honey they never think of buying any, as the grocer usually has a lot of new goods to offer when the regular list is purchased. When going to a grocery store myself I have never known a clerk to make an effort to sell me honey. Then many of the best customers do not go to the store themselves, but use the telephone almost exclusively. These same people, on the other hand, go to markets several times weekly, and usually have their special stands to which they go for butter, eggs, vegetables, etc. If honey were displayed attractively, and the salesman, having but a few different kinds of goods to sell, used a little pressure, he could build up a good trade, as evidenced by the one man mentioned above, who realizes 20 cts. a pound for comb honey.

It may take some time for a bee-keeper to build up a trade in this manner; but I think that, with perseverance, a fine business could eventually be established if the goods are attractive. The majority of salesmen in the markets are glad to sell any thing on which they can make a fair commission. I have found that extracted honey sells readily also in pint and quart Mason jars, at 45 to 50 cts. a quart, about 4 cts. being allowed for the empty jar if the purchaser cares to return it.

A small proportion of farmers around the country here keep bees, mainly in box hives, and produce some dirty-looking crooked honey in 4½ square sections without separators or starters. Yet in spite of the appearance they market it at about 20 cts. a pound. Grocers could not sell the same apology for honey for half the price. This only shows what can be done by bringing honey, even if of a very inferior quality, to the direct attention of the consumer.

The same salesman in the market could

hand out literature showing the desirability of honey as a food, with a surer chance of such literature being read than could the grocer, as any circular from a store would be looked upon only as another advertising circular, and be destroyed without being read.

Ronk, Pa.

WHEN IS HONEY RIPE?

The Number of Extracting-combs per Colony;
a Discussion of Some of Mr. Alexander's
Plans.

BY F. B. CAVANAGH.

In the comparison between the Alexander and the Lathrop system, page 484, some important points were overlooked—first, of what a "set" of combs consists. Both parties use the ten-frame L. hive, I believe. Mr. Alexander, however, used ten combs to the super; Lathrop only eight, I suspect. Now, when it comes to ripening honey it is a very simple matter to figure out a difference of one-fourth more comb surface per super in a ten-comb super than in an eight-comb super of equal width. Also the cells are nearly one-fifth deeper in the eight-comb super than in the ten-comb. Of course, the honey will ripen quicker; but there are still other things which I have observed from experience. With reference to *specific gravity* of honey, let me call attention to the fact that *specific gravity* and *ripeness* are two different qualities. The former refers to its thickness, density, or, technically, the amount of water a given quantity will displace. Ripeness is the change (chemical or organic, I know not what to call it) that takes place when honey has been stored in a warm place.

Now, honey may be *thickened* on the hive in one week, but *not ripened*. Alexander tells us that he doesn't throw thin honey out, and I believe him, because I know what a great difference there is in locality. Possibly Alexander's bees fly so many miles that they in some manner get rid of the surplus water *en route* to the hives.

Now as to locality, I have seen honey in Wisconsin, not far from Mr. Lathrop's location, which would extract thick and heavy with practically no capping. Again, I have seen it in another State where the *capped* honey was not thick, and had to be thickened more perfectly after extracting.

Now, lest I get myself into too deep water, perhaps I should qualify here by saying that thick honey, too newly gathered to be ripe, will ripen perfectly in *sealed* containers in a warm temperature. Thin honey, I do not believe, will ripen much until the water is removed. I used to think the dry atmosphere caused a difference in thickness of honey on hives, but have seen both the cases referred to above occur during a protracted drouth. It must be some other cause.

Now, the season of the year for clover

finds the bees in a different mood from that of buckwheat bloom. In June the hive is full of brood, feverishly expanding, and naturally in a swarming mood. The conditions in a rush of thin clover nectar are different from that of a slower flow of buckwheat. Bees curtail their brood-rearing, contract the cluster, and think less of swarming as autumn approaches.

Let me sum up the variance between the conditions making the super plan feasible or not. Ten combs of about $1\frac{1}{10}$ -inch thickness, and a total of $\frac{1}{4}$ more comb surface; a tendency of the bees to quiet down late in the season; thick nectar as gathered; proper facilities for keeping a high temperature for ripening by the use of dark-painted metal houses and open tanks. Conditions where two or more supers must be used: eight combs of about $1\frac{1}{2}$ -inch thickness in each super, and less comb surface with deeper cells; thin nectar coming with a rush; bees with much brood and swarming inclination; no ripening facilities. Now let me add one more big one, and that is the difference between getting rid of an excess of flavor or aroma which will later be baked out any way, and of letting the clover aroma escape. Why, I wouldn't think of putting clover honey into a tank to sweat out all its fine flavor; but a baker's grade of buckwheat is bound to be aromatic enough any way. Giving due weight to the difference in conditions, put it on record that methods for producing buckwheat baker's honey will not give a choice clover table honey.

Now, about requeening, for it was the last item which prompted this reply. I must say that it was "never this way before," when I ran bees in Michigan and Wisconsin; but here, with our light clover flows and heavy fall flow, our colonies simply will not requeen themselves. Queens live on until almost gray-headed, and the colony dwindles. If superseding occurs at all it is liable to be in a dearth of honey, and result is poor queens. Requeen themselves? Not here. I grafted several hundred cells in June, and am taking care of this matter carefully. We also clip queens, and almost invariably find them living on past their usefulness, if not molested. Location makes the difference.

Hebron, Ind., Aug. 4.

Queen Piped when Bees were Taken Away.

Some time ago I had a natural swarm from a colony with a clipped queen that was about one year old. The swarm returned, and so I shook the swarm but failed to find the queen. I removed all the brood to a new location with some adhering bees, and, as I found afterward, the laying queen. I examined this brood shortly afterward; and as I opened the hive I distinctly heard the queen piping. I lifted one frame of brood and caught her in the act of piping with trembling wings. I looked closely, and she did it again until I placed her with the shaken swarm on the old stand. Then she stopped. Cabot, Pa.

W. F. EBERT.

[It is possible that the piping of the queen was due to changed conditions; but we have our doubts about it. It would be our opinion that it is due to some other cause.—ED.]

Heads of Grain

from Different Fields

Preparing Early for Winter.

The first week in September we take off all of the supers not previously removed from the hives, and allow the bees to store what honey they can from then until winter in the brood-combs. About the first of October we open and inspect every hive—first, to see the queen; second, the number of bees; third, the condition of the brood; fourth and most important, the amount of stores which we estimate by lifting the frames one at a time, and judging, by holding them, how much honey they contain. In our locality a good-sized colony should have between 35 to 40 lbs. of stores, while a smaller colony requires from 25 to 30 lbs. Last fall I had a number of colonies that had over 50 lbs. of honey. Should a colony not have enough, and some other colony have too much, we equalize; and if we have no frames of honey to give we feed sugar syrup till we judge they have enough to winter.

About November first we put the colonies into winter quarters. We have all of the hives in two bee-sheds, a picture of which was in *GLEANINGS* for Dec. 1, 1909. These are boarded tight on three sides with the long open side facing the sun. In these sheds the hives remain, winter and summer.

Most of the colonies are in chaff hives, and from these we simply pry off the cover, put on an empty super, lay three sticks on the frames crosswise, and over these three another stick lengthwise. Then we put on a sheet of enamel cloth or table oilcloth, and over this a chaff cushion, and finally the cover.

The part that we wish to emphasize is about sealed covers. At first we always put the cover on tight, the result being that the cushions were wet, the frames and honey moldy, and a rank smell in the hives. We soon overcame that difficulty; and now after the cushion is on we lay several strips of broken section on the super and put the cover on them. This leaves an opening about $\frac{1}{8}$ inch all around the top. Our hives and cushions are now dry, and the frames are no longer moldy. We formerly contracted the entrance; but by experience we found that the bees wintered better with the entrance not contracted.

We winter some colonies also in single-walled hives. Over these we put a rough box or outer case, and pack the space between with old newspapers. We like much better a telescoping winter cover that goes over the outer hive, leaving a dead-air space between the inner and outer hive.

Stettlersville, Pa.

GEORGE REX, JR.

A few Questions on the Selection of a Motor Cycle for Bee-keepers' Use.

I have read with much interest your articles on autos and motor cycles. I operate five bee-yards from five to fifteen miles from home. Thus you see my interest. In your motor-cycle article I wish you had discussed the magneto type versus battery, and also the free-engine clutch, their merits and demerits. All the motor cycles I have had any thing to do with so far are very hard to start, and the equipment that overcomes this as much as possible is the kind I want. Also please give factory address of Harley-Davidson and Yale machines.

Wolfe City, Texas, Aug. 11. V. GREEN.

[We would not advise you to use a magneto on a motor bicycle. It adds considerably to the expense and to the complication. The amount of current which a motor cycle uses is very limited, and you will find three cells of a common battery quite sufficient to run you for two or three months. Of course, if you use the machine constantly you may have to renew the batteries oftener. You can usually buy dry cells at retail at 20 cents apiece.

Neither would we advise you to get a two or four cylinder machine. They add greatly to the weight, and have no advantage over the single cylinder except that they will permit of a little faster speed. The single-cylinder motor cycles are heavy enough with a simple battery equipment; and to add cylinders or a magneto, or both, only adds to the weight and to the difficulty of starting. In the line of a clutch we could not advise any thing better

than a belt-tightener of the Harley-Davidson or the Yale type, and by all means get a belt-driven machine. Do not let any agent talk you into buying a chain-driven outfit. Except for racing purposes the chains are going out. A belt-tightener outfit will give you all the advantages of a clutch system. In other words, you can loosen the belt and let the engine run free if necessary. This is an advantage when one is carrying mail in rural-delivery routes and in making frequent stops. All he has to do is to throw the lever, loosen the belt, throw on the brake and stop the machine, letting the engine run; deposit his mail, gradually tighten the belt, and start off again.

You will find the Harley-Davidson a little higher-priced, but enough better than the Yale to compensate for the difference, although the Yale is a much better machine in heavy sand or in excessively hilly country. The Yale is a lighter machine, but can not be run as slowly on a level as the Harley-Davidson, nor is it quite as easy riding.

The Harley-Davidson is made by the Harley-Davidson Motor Co., Milwaukee, Wis., and the Yale by the Consolidated Mfg. Co., Toledo, Ohio.—ED.]

Hydrogen Peroxide for Stings.

Have you ever tried hydrogen peroxide for bee-stings? I have been using it for some time, and I must say I am more than delighted with its effect on them. The way we came to use it was this: Our two-year old one day got a sting on the end of his thumb, which, of course, made him cry. My wife, anxious to do something for him, poured some of the solution into a cup and put the thumb into it, and, to our surprise, he almost immediately stopped crying. A few days after, a neighbor's boy who was playing around the hives got stung, and my wife applied it again, with similar results. In the mean time I remained skeptical, but have tried it since on myself quite frequently, and find it relieves the pain wonderfully, and there is but little or no swelling if it is used soon enough.

Stratford, Ont., July 11.

E. H. EIDT.

[Despite the testimony of you and the children, we would doubt very much whether hydrogen peroxide would have any more effect than so much water. As one of our local physicians says, it is about as near water as any thing there is found in *materia medica*. It is only very slightly acid, while the sting of a bee is violently acid. If hydrogen peroxide were an alkali, it is conceivable that a liberal application of it might neutralize the acid of the sting. Its chief value lies in the fact that it is a germicide, and therefore valuable for preventing infection, etc.

The only thing that will relieve a bee-sting is an application of either hot or cold water. Cooling applications of any thing will bring relief; and as hydrogen peroxide is nearly water it could hardly have more than the effect of so much water.—ED.]

A Colony that Persisted in Killing Queens.

I have kept bees from boyhood, nearly all of the time; but I have run up against something that beats me, and I should like to have you or some reader explain why this particular colony should be so stubborn in the way of accepting a queen. To commence with, I gave this colony a queen that I had sent away for. As soon as they liberated her they balled and killed her. I then introduced another, which shared the same fate. Then I gave them a frame of brood. They raised a queen, and as soon as she hatched I found her balled, and, later, dead. Then I tried ripe queen-cells at two different times. Both these queens met the same fate. There was not an egg in their combs, so no chance for fertile workers. They stored their combs full of honey and pollen. I have at this writing broken up the colony, dividing the frames and adhering bees, giving them to several other colonies in the bee-yard.

Bakersfield, Cal., July 27.

E. L. DICKINSON.

[Once in a great while we find a colony that has a mania for killing queens. We had one such that would kill every queen we attempted to introduce to it by all the different methods described in the various bee books. We gave them cells, but the bees destroyed them. They would kill the freshly hatched virgins. We gave them a frame of freshly laid eggs from which they raised a cell or two, and finally a queen; then when she was about ready for

business they killed her. The only thing to do with such colonies is to brimstone them, or better, perhaps, do as you did—scatter the bees among a dozen other colonies. But even this would be questionable policy, as a few of the adopted bees might kill a valuable queen.—ED.]

Bees Used for Fertilizing Alfalfa in Wyoming.

The readers of your paper who have been reading my advertisement for some time regarding the Big Horn Basin of Wyoming will be interested in learning a new use that has been found for the busy bee out in this new valley where so much alfalfa is being grown. Farmers in that locality found, some few years ago, that alfalfa grown for seed did not do well, and the authorities of the State University accounted for it by the fact of there being a lack of wind to mix the pollen properly, and suggested that bees be used for this purpose as well as for making honey.

The Big Horn Basin Valley, which is larger than the State of Massachusetts, being at an altitude of from 3600 to 4500 feet above sea-level, and surrounded by mountains from 7000 to 13,000 feet high, is so located that the wind does not blow very much at any time of the year, and this is especially true during the growing season. Farmers in that locality became interested in bees, and at this time there are thousands of hives that send out their busy workers every day that not only are used to gather honey, but are also used to mix the pollen of the alfalfa, and thereby greatly improve the quantity and quality of the alfalfa seed.

Omaha, Neb., Aug. 11.

D. CLEM DEAVER.

Sweet Clover, etc.

On page 496 I note what Bro. Ed Van Sickle has to say about sweet clover, and what he seems to call a pest, as many others have done, who, like him, have not studied it, but have taken up the pest cry to respond to some one else; but I am glad that our farmers are getting awake to the value of sweet clover as a fertilizer; and now in this section we do not have to fight for it as we once did.

I have talked sweet clover to our farmers at their institutes when it was almost worth a man's reputation to mention the subject publicly; and I want some more of the booklets on sweet clover.

I also note the story, as he gives it, of the old Methodist preacher. Well, it chanced to be my good fortune to know Father Salisbury; and while he was one of the pioneer men to spread the gospel of Christ, he was also a pioneer in spreading beeology. I have known him to have as many as 200 colonies when this was a country for commercial bee-keeping. I have known him to have several acres of sweet clover for his bees. He was also the first man in our section to import a queen from Italy, paying \$10.00 for her, and getting her safely through her long journey. He was successful in introducing her to get a start of Italians. Father Salisbury has long since passed to his reward, and sweet clover still prospers, whether he was the culprit, so termed, or not.

In this locality, twenty miles from his old home, a good "Brother Everitt" was the one earlier to receive all the censure for sowing sweet clover; and as my wife and I are on our pilgrimages to and fro over the land, and see sweet clover growing, I often say to her, "Brother Everitt has been here." I trust the time is not far distant when all our people will wake up to the value of the plant; then we shall have better forage for our bees.

The honey crop is good here this season, and stocks have increased well. Grain farming has turned us away from being a commercial bee-keeping section as in earlier years.

Philo, Ill., Aug. 3.

M. L. BREWER.

[But, friend B., we did not infer that Mr. Van Sickle meant to speak of sweet clover *now* as a pest. He simply referred to the time when he labored under that impression. He speaks as a new convert to a new piece of information. Opposition to sweet clover has now practically ceased, and it is fast coming to be recognized as one of the greatest blessings that have come to the farmer for many a year.—ED.]

Yellow Sweet Clover.

I have been experimenting with yellow sweet clover for the last two years, and find it second only to alfalfa. Stock of all kinds like it—hogs, chickens,

and cows. My sweet clover in my young orchard commenced to bloom the last week in April, and bloomed till the 10th of July. It was just in front of my apiary, and it was covered with bees all day long. I think I have 1000 lbs. of sweet clover from 25 hives. It is as white as white-clover honey, and I get 20 cts. per lb. for it in Concordia. I had a swarm that came off the 17th of May. The hive weighed 40 lbs. when I cut them in, and now it weighs 95. I think that does pretty well for a new swarm.

I cut my sweet clover for seed the last of July, and will thrash it with a clover-huller before long. I intend sowing several acres for pasture this fall. I think the yellow variety is better than the white, as it does not grow so rank, and stock like it better. There is no danger of bloat when mixed with alfalfa. For pasture it is easier to grow than alfalfa. In missed places in my alfalfa I sowed sweet clover, and it did finely. It has to be sown in the fall if we expect it to bloom the following season.

Concordia, Kan., Aug. 8.

J. W. WILSON.

Sweet Clover Finally Appreciated by Agricultural Men.

I inclose a clipping taken from *The American Sheep-breeder and Wool-grower* for June, 1910, which I understand has a large circulation among sheepmen. Its interest to bee-men lies in the fact that it shows how other industries are waking up to the value of sweet clover.

Lovelock, Nev., July 14.

C. C. LARSON.

Sweet clover, that traditional pest of field and roadside, is finding friends at court. As a fertilizer, inoculator of soils, in the culture of alfalfa, a proven forage for stock, and an excellent and profitable hay crop when properly cured, the old, tough, one-time valueless sweet clover is being sown and cultivated with great care in all parts of the country.

An Above-ground Building v. a Cellar.

Is a good tight building all right for bees in winter, or is a cellar better? Which is preferable to use for a cellar—cement or rock?

Harper's Ferry, Ia.

E. M. PHIPPS.

[A building above ground is usually not a good place for confined bees in the winter, for the reason that it is difficult to control the temperature of such building. As you probably know, the temperature should be as uniform as possible, not varying much from 45° Fahr. An above-ground cellar is hardly to be recommended, then, on this account.

For an underground cellar we do not know that there would be any choice between rock and concrete. We would use whichever is the cheaper. If there is stone right there, you might find it cheaper to use that material; but if not, you would very likely find that the concrete would be cheaper.—ED.]

Moths do Not Molest Strong Black Colonies.

Since the merits of the common or black bees are being discussed I wish to say a few words in their defense. I have bought Italian queens from the most noted queen-breeders in America, but have never found them equal to my blacks. My blacks winter well, build up quickly in the spring, and store far more honey than any Italians I have ever had. They seldom swarm; but when they do, such swarms! I have not lost a colony from moths for seven years; in fact, I never lost any from such cause except neglected queenless colonies. I have not had a winter loss now for two years. My bees get the nectar when there is any to get. I am sorry that I ever introduced Italians into my apiary, and do not expect to buy any more. Diseases of any kind are unknown among my bees.

W. Va., July 25.

J. D. THOMAS.

Another Way to Fill Empty Combs with Syrup.

Allow me to add something to Mr. G. M. Doolittle's article on feeding bees by filling empty combs, p. 341, June 1. I wonder if he ever tried standing the combs on a slant in the tub or boiler and pouring the syrup from a sprinkler on to the comb. I have tried this method with abundant success. The syrup, as it runs down the comb, does not so completely cover the cells, thus preventing the escape of the air, as when the combs are laid flat. I have also had very good success in churning the combs up and down in the syrup a few times, thus filling both sides at once.

Batavia, Ill., June 3.

W. M. M. WHITNEY.

Will Bees do Well in a Cave where the Sun Shines on the Hives Only a Part of the Year?

I am starting an outyard seven miles from home in a canyon that has a fair amount of bee pasture in it—principally sweet clover. I have the bees located in a large cave on the side of the canyon, facing south. The sun does not shine on the hives from about May 1 to Oct. 15, at which time it will strike them in the middle of the day during the remainder of the year. The cave is very dry with the exception of a little seepage or drippings in one end. Do you think bees would do well in such a place? Would they winter well there? The climate is mild in winter. Do you think their being in a cool place would have much effect on their swarming? I use the ten-frame Jumbo hive, and will try for both comb and extracted honey.

Mohler, Wash., Aug. 6. C. L. SNIDER.

[It is a little difficult to say whether the cave described would be a good place to keep bees or not. We would suggest putting half the bees in the cave and the other half out in the open air and note the results. It is our opinion, based on considerable observation, that you will find that those colonies that have more sunshine will do better than those that are shaded so much.—ED.]

Introducing Cells and Virgins; after Trying Both, the Majority Prefer to Introduce Cells.

I think Mr. Pritchard has the better of the argument with Mr. Bain on the question of giving cells instead of newly hatched virgins to nuclei, no matter whether to single or twin nuclei. After trying both plans in the past twelve or fifteen years I have decided that it is more satisfactory to introduce cells, largely because there is an actual saving of time over the other plan, even when the virgins are kindly received. Just why this should be, I am unable to say; but after reading the editorial on page 336, June 1, I again gave the matter a trial with the usual results—that is, the queens hatched from the cells that were given to nuclei were laying from one to several days—generally two or three—before the virgins were laying that were introduced just after they had hatched. Probably Mr. Pritchard has also found this to be the case.

Holly Hill, Fla.

C. S. HARRIS.

Ventilation at the Top to Prevent Swarming.

I agree with Dr. Miller, page 440, July 15, as to the value of top ventilation. I use eight-frame hives, and run for both comb and extracted honey. For the last three years, during the honey season I have been giving top ventilation by sliding the supers far enough to let the bees pass in and out between each one. I also raise one end of the cover over the upper super. During this time I have had only one swarm out of every thirty hives—a little over three per cent—and there were no queen-cells cut out. I keep one empty super on top during the honey-flow. The bottom entrance is only $\frac{1}{8}$ inch by the width of the hive.

The colonies having plenty of ventilation at the sides and top average one swarm out of thirty, as mentioned above, while those in hives that were closed all except the lower entrance swarmed two or three times each. I use a large shade-board that keeps out all of the rain.

Philadelphia, Mo.

ELMER HIPKINS.

Why would Not these Bees Stay Hived?

I have a swarm whose actions I can not understand. I hived the bees in the most approved manner, giving them two frames of brood, and attending to the shading and ventilating of the hive. But they have swarmed out again and again for over a week. I finally placed a queen-excluder under the brood-frames, and now they return of their own accord, but continue to swarm. The queen is not clipped, and so far I have been unable to find her. Why do they act in this way?

Ashland, Wis., Aug. 6. J. E. COOKE.

[We occasionally find a colony that has a mania for swarming. The only thing to do in that case is to hive it, then carry the hive (bees and all) down cellar and keep them there for a week till they can cool off—the cellar to be darkened as much as possible in the mean time. Of course, while they are in the cellar they should be given a frame or two of honey.—ED.]

Are Snakes Immune to Bee-stings?

Garter snakes are enemies, we know. Are they immune to bee-stings? I have seen them scramble out of a hive with twenty or more bees trying to sting them, but none seemed to succeed in lodging its weapon.

Montpelier, O., July 21.

G. W. JOICE.

[Some years ago, noticing some snakes crawling out of a hive we picked one of them up on the end of a stick and repeatedly dumped it in front of the infuriated bees. While they made desperate attempts to insert their stings, the snake seemed to be entirely unharmed. We then killed the snake, but could not find the slightest trace of stings in its body. It is possible there are some snakes with a skin soft enough so the stings would penetrate them. We are of the opinion that garter snakes, at least, can not be harmed by bees.—ED.]

When to Remove Finished Comb-honey Supers.

On some of my hives there are from two to four comb-honey supers. Is it proper to keep on building up as soon as the sections are full?

Millerton, N. Y., Aug. 9.

H. J. PFAHL.

[If you were producing extracted honey we would advise you to keep on stacking up the supers, allowing the honey to remain on the hive as long as possible; but with comb-honey production it is a little different; for if the honey remains on the hive long after it is finished, the bees traveling over the surface of the comb give it a daubey brown look, and it is then called "travel-stained." Usually, the sooner the finished sections can be removed, the better.—ED.]

Sweet Clover—Didn't Need Teaching.

I have a small piece of sweet clover, and it surely is a great plant for the bees to work on. I have a mare which I did not need to teach to eat sweet clover. I just simply put it in her manger, and she ate it as readily as any other clover.

H. C. EAKINS.

Colman, Michigan, August 8, 1910.

[Friend E., your report is right in line with others we are receiving almost daily. We hope all of our readers who have had any experience in feeding sweet clover to horses and cattle will report.—ED.]

Shooting Down a Swarm.

Miss Amy Machold, an eleven-year-old girl, in the absence of the men-folks found a swarm in the top of a cottonwood-tree; and, being unable otherwise to get them, took her brother's rifle and shot them down and afterward hived them.

We observed Italian bees working on red clover in preference to lucerne and white clover. Is this unusual?

Blackfoot, Idaho.

WILLIAM MACHOLD.

[Yes, if the lucerne and white clover were yielding nectar; but the probabilities are that neither was yielding at the time, and red clover was.—ED.]

Why Were the Young Bees Being Carried Out?

I should like to know why my bees are carrying out so many young bees. They will carry these young bees out bodily, and carry them nearly out of sight sometimes. These young bees, when let go, will fly at once, and sometimes will go nearly to the ground before taking wing.

Crooksville, O., Aug. 8.

E. G. PETTIT.

[We are unable to say why your bees are carrying out young bees, without further particulars. We can only surmise that the brood from which they were reared was overheated at some time, and that these same young bees are in some way defective. Usually such bees can not fly. It is possible that the young bees in question were able to use their wings to some extent, even though they were defective. You may put it down as a rule that the regular workers of a colony will not tolerate any bees in a hive that are not structurally perfect in every way; and under the circumstances we shall have to assume that there was something wrong with those bees. There is a bare possibility that bee-paralysis may be the cause of the trouble. In that case you would see black shiny bees rather than young-looking fuzzy ones.—ED.]

Our Homes

By A. I. Root

I am come that they might have life, and that they might have it more abundantly.—JOHN 10:10.

Take no thought for your life, what ye shall eat, or what ye shall drink; nor yet for your body, what ye shall put on.—MATT. 6:25.

I shall have to confess that the second one of our texts was for many years perplexing to me. Even when a child it was hard for me to understand why Jesus should tell us to take no thought in regard to what we should eat or drink or what we should put on; but of late I have been coming to understand that he meant we should take no *anxious* thought about our food or apparel. In view of what has been said lately in regard to overeating, we can readily understand how his pure heart was pained to see so many people devoting their lives to the matter of preparing elaborate dishes and great varieties of food; and the same way in regard to raiment. We notice in the daily papers almost constantly accounts of women who have not only hundreds but thousands of dollars invested in fashionable clothing; but when it comes to jewelry and diamonds, if we designate these as articles of *apparel*, the amount of money carried about by one woman on her person would feed the starving people in China and other foreign lands for a long time at least.*

Just now much is being said in regard to high prices of the necessities of life; but, oh dear me! people who are earning only moderate wages might live and lay up something for a rainy day if they did not think it incumbent on them to keep up with *style* and modern *customs*. Just now I am rejoicing and happy with a very little rolled oats and milk, as I have told you several times on these pages, and plenty of fruit. Apples are so cheap now that everybody can have them in plenty. Less than a week ago I could not get good apples cheaper than three for a dime; but now we have plenty in our orchard, and I suppose most people can get a *whole peck* of good wholesome apples for a dime instead of only three. And now in regard to raiment or clothing. How much is really needed to preserve health, especially during the summer time? or if you go down to Florida with Mrs. Root and me, how much is really needed the whole year round? I propose to

* Here is what *Everybody's* has to say in regard to "raiment" for women:

In no other country do women spend so much money on their personal adornment as in America. The American woman is clothes-mad; not only does she wear more expensive clothes and jewels than women of other countries, but she wears a far greater variety, and her taste for elaborateness amounts to a craze. Nowhere in the world does one see this same overdressing save among the *declassée* women abroad—at Trouville, Ostend, or some such continental watering place. Throughout Europe the women of high nobility and social position are like wrens compared with these cockatoos of the half-world. It is an unpleasant thought that it is the latter who set the standard which our fashionable women follow with naive avidity.

discuss the matter directly in this Home paper. Let me digress a little.

Almost forty years ago, shortly after GLEANINGS was started, in some way or other I became acquainted with Professor Cook, then of the Michigan Agricultural College; and after we had corresponded quite a little, and he had sent us some helpful notes for GLEANINGS, as you will discover by looking over our early volumes, I made a trip to Michigan and looked through that, not only one of the first, but one of the very best, of our agricultural colleges and experiment stations. Long will I remember when Professor Cook invited me to his own house, and permitted me to have a glimpse of that model home. There were two children in that home at that time—a bright boy and a girl; and, besides these, the mother, Professor Cook's good wife. If Bert Cook is not at present a great and good man he certainly ought to be, with such a mother as he had. It has been my privilege during this life God has permitted me to live, to meet with many great and good men and women; and may he be praised for it. Mrs. Cook was a model mother. She was educated, bright, and intelligent, well posted, and up to the times, and it was really a beautiful sight to see and hear her talk to those lovely children. They were a *busy* family all around. In order to teach the children language as well as Bible, if I remember right, the morning Bible readings were partly in a different language from theirs; and it was wonderful how those two children took hold, and how the whole household seemed to have caught the spirit of *teaching* and *learning* from my good friend Professor Cook. He was then in his youth, and full of a sort of boyish enthusiasm for his work.* I have before remarked that his peculiar method of teaching has so impressed itself on his many pupils that whenever I have met one of them anywhere I have almost invariably recognized that they were at some time in their lives students under Professor Cook.

After breakfast my good friend took me the rounds among his different classes; and I was not only rejoiced but greatly profited. When we came around at dinner time Mrs. Cook inquired about the different recitations. I was especially interested in a class in physiology; and when she asked her good husband what *line* of talk he gave the pupils in that morning's physiology class, he replied, with a comical look, "Why, my dear wife, I talked to them this morning about *nightgowns*." And, dear friends, that morning talk about nightgowns has followed me (and troubled me) more or less for about forty years; and therefore I wish

* Professor Cook, at the time I mentioned, not only loved his work—that of teaching students, but he loved the students themselves, each and every one of them, in fact. I am sure his old pupils will endorse this statement. In his home in California he may be doing *now* the same kind of work; but he is so far away that somehow we here in the East do not feel his touch and enthusiasm as we used to do in olden times.

to announce to you that the subject of *this* Home paper is to be

NIGHTGOWNS.

Professor Cook said in his talk to his students that morning something like this:

"Boys, this matter of health and its preservation is of such vital importance to you that I am sure you will excuse me if I am a little vehement in urging you, if you have not already commenced, to begin, each and every one of you, to remove entirely, when you go to rest, all the clothing you have worn during the day; then before you retire, or after you get up in the morning, take some sort of bath every day of your life. If you can not do any better, take a sponge bath; or if you have not a sponge handy, dip your hands in a basin of water and then pass them all over the body. Then take a rough towel and rub every portion of the skin on your body—not only to remove the water and moisture, but in order to get up a circulation, and keep the skin in a healthy and vigorous state. After having thus cleansed the entire surface, and induced a brisk circulation, put on your nightgown. You may think this is too much trouble, and that you have not time; but if you will take my advice, in after-years you will certainly thank me, even if you do not do it now while you are young."

I felt impressed with this talk at the time, and mentally resolved that I would follow his advice; but I must confess to you with shame that it was not till I was *seventy years old* that I took the trouble to get a nightgown and follow Terry and a host of others who have advocated daily cold-water baths. Let me digress once more briefly.

More than sixty years ago, when I was a feeble and puny child whom hardly any one expected to live, a lecturer on physiology came along who taught some very important truths; and my father and mother finally consulted him in regard to my health. Among other things he said I must have a daily bath; and after the bath I should walk at least half a mile and back before breakfast. As we were poor people at that time, and bath-tubs and modern conveniences were hardly yet invented, I simply had a basin of water and a towel in my little unwarmed bedroom. The professor said that, after I got used to it, I could take my bath in a room where it was freezing cold, even if I had to break the ice in the wash-basin and bathe; and I found it true. I commenced in the fall; and as the weather grew colder I not only found nothing particularly disagreeable, but I rather enjoyed rubbing my thin anatomy all over with ice-cold water—at least the water was that cold when I dipped my hands in it; but I suppose they may have warmed it somewhat. As our family cow was pastured about half a mile away I had a good reason for my morning walk. In a very few weeks the benefits of a bath and a morning walk became apparent. I quickened up and began to act more like other boys. I can not tell now how long I kept

up that daily sponge bath. I fear it was dropped when the weather became very cold. A few times since I have taken it up for a limited period in very warm weather; but as it seems necessary for me to wear a starched shirt, collar, and necktie, when going out among people, and with so much on my hands that needs doing, I have always declared I *could not* take so much time for dressing and undressing.

When I was up at the cabin in the woods, in Northern Michigan, where I had a fountain that sent a spray clear up among the tree-tops, I had a daily shower-bath, as it was not a hard task to do so. Besides, I was not crowded every minute of my life with a heap of letters, and books and papers all piled up before me.

I have told you how this big brother of mine convinced me I would feel better to omit cooked suppers, or suppers of any kind except fruit. Well, he also tried to convince me that I ought to take a daily bath, especially in that Florida climate; and about a month ago, or a little more, I got a pair of nightgowns and started to follow Terry, daily bathing and all.

Now, you people who have followed what I am talking about, all your lives, perhaps can skip all of this; and I would not go on with it if I were not convinced there are many others like myself who have not been able to scrape up the energy needed to fall in with God's physical laws. We are told that various pernicious insects breathe through their bodies, and that we can choke them to death with dust or any sort of grease closing the breathing-pores. Well, it just begins to be clear to me that human beings, like insects, breathe through their body as well as through the mouth and nostrils. Our great statesman and president, Abraham Lincoln, used to remove his shoes when writing, so that his feet might breathe. Well, if you have not tried it, you will find, as I do, I am sure, a wonderful benefit in giving your body a fair chance to *breathe* all over as God intended it to do.

Whatever the dear Savior may have meant in what our text says about "food and raiment," I am sure it included plainer and more simple raiment. The nightgown and bathing save the work of the women-folks in the same way that uncooked food saves work. If you are well washed before you put on the night-dress it will keep clean a long time; the same with the sheets and the pillow-cases. Very little washing will be needed, and every thing will wash easily. And, my good friend, do not be in a hurry to remove your nightdress and get on your heavy clothing, especially in warm weather. The body is greatly benefited by a good long air bath. When I got down to Florida a few days ago my brother announced an innovation in the way of health. He said they had not lighted their "Best light" gasoline-lamp at all for weeks. In fact, they did not have any lamp—no coal-oil can, no lamp-wicks, nor any thing of the sort. When it became too dark to see they

went to bed; and when it was light enough to see to go out and feed the chickens, they both got up. Instead of reading several hours by lamplight, and then getting up after the sun was up high in the sky, they just used *daylight* instead of *lamplight*. Now for the greater part of my life I have been reading piles of books and papers by lamplight. Of course, it has occurred to me many times, that, if one can get into the habit of getting up as soon as daylight appears, especially in the summer time, he could do his reading by *God's sunlight* instead of man-made illumination. When you come to think of it, what a ridiculous idea it is to have all of this machinery for *artificial* light when there is no need of it! Now, then, even at the present time, during the middle of August we can see nicely by daylight at four in the morning. In cloudy weather it might be a little later. But we do not have many clouds in August.

Well, one reason why I could not pull off my starched shirt, and collar and necktie, before retiring, was because I read my books and papers until I was "clean used up," just ready to drop on my pillow, as it were. By the way, my good friend, especially if you are approaching or have gone beyond threescore and ten, let me suggest that it is poor policy for you to get "clean used up," especially with brain work. If you are performing physical exercise, I do not think it matters so much. The way I am doing now when it becomes too dark to read is to take my cold-water bath. After that, I put on my nightdress and sit around and visit, but not undertaking to read or do any thing that requires mental labor. About eight o'clock I drop to sleep easily; and by four o'clock in the morning I am fully refreshed, and ready to do much more profitable work than the night before in the way of reviewing books and papers.

Lately I have had a revelation. During my past life, when I awoke at night I could not get to sleep again; but with my sponge bath, massage, and no suppers, if I sometimes lie awake half an hour or more I just lie still and feel happy because I am so well.

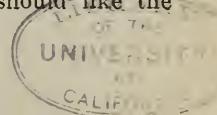
Father Kneippe, over in Germany, has a celebrated water cure; and among other things he has a fashion of having his patients go out and walk in the wet grass. Well, I have spoiled more shoes by walking in wet grass than in almost any other way. Mrs. Root has often told me that if I would put on rubbers before going out to feed the chickens, etc., my shoes would last very much longer; but I can not stand rubbers, as they make my feet sore. Well, this is what I do now. I jump out of bed when it is daylight, and run downstairs in my nightgown. Then I can go out in the wet grass or anywhere I choose, bareheaded and barefooted. You need not be afraid of shocking the neighbors, for you will not be likely to see anybody out much before six o'clock in *any* neighborhood—at least that is my experience. And, oh what fun it is to feed the chickens, see the posies, pull the

weeds, and tie up the vines, prune the young trees, etc., with nothing but a nightdress on! You do not need any sort of covering for your head until the sun makes it hot; and, by the way, we have been recently told by able teachers that the reason why so many men are bald is because they do not go bareheaded as the women do.

Now just look here: For years and years I have worn a flannel pad across my chest all summer long. Every time I took it off I had a sore throat, etc. Yes, when I started for Florida on the 18th of July, early in the morning, I had on my fur cap and overcoat. Of course, I took them off when the sun was up; but I did not have any use for them at all while in Florida. By the way, in order to get the full benefit of a cold-water bath you ought to have some exercise that will get you into a free perspiration every day of your life—say walking two miles; and if you can take your bath right during the perspiration, I think it is very much better. The machinery inside seems to catch on to what the water is doing outside, and you get a more thorough cleansing. Let me digress a little once more.

I told you about that little pump in the middle of our lawn down in our Florida home. It cost only six or seven dollars all complete, and the water is almost as soft as rainwater. Well, in order to water our seven yards of chickens I bought some second-hand iron pipe at two cents a foot and arranged some little wooden troughs so that each trough ran through three yards. There are three troughs in all. Under the spout of the pump in the dooryard is a large-sized oil-barrel with about a foot of the top sawed off. The iron pipes that water the poultry run into this barrel, and the pipe over the three troughs is adjusted so the water will drop about thirty times a minute. This does not take a very large amount of water in the course of 24 hours. It might drop slower, but in that case it would be apt to clog up. There is no objection to dropping faster except the waste of water. Well, we recently put up a cypress tank or cistern to catch water from the house. In the summer time, when it rains every day, this cistern is running over a great part of the time. Now, to save the labor of pumping daily, we recently connected this cistern with the water-pipes. As the cistern is very much higher than the pump on the lawn, unless the outlet to the barrel were closed the water would all run out of the cistern. Well, this barrel I have described is just large enough for me to sit down in so the water just comes up under my chin; so when I prefer a bath by immersion I just go out after dark, throw my nightgown over my head, and have a massage under water as well as out in the open air.

Do you say you can not stand a cold-water bath? Well, after that tub of water has stood out in the sun all day it is a little warmer, if any thing, than I care for. In fact, when I feel as if I should like the



water a little cooler I just remove the plug from the bottom, and let in the cooler water from the cistern. This, of course, makes the tub overflow. I said "overflow," because the water that comes in from the bottom keeps the contents pure and clean.

Now I have gone over this in detail in order to convince you how simple a matter it is to have at home all the benefits of the up-to-date Turkish bath, where you pay a dollar for a single treatment.

By the way, if you wish to take a nice shower-bath that will not cost you a cent, and which will not take more than a few minutes, with nothing at all to pack up and put away, whenever it rains after dark just throw off your nightgown, go out on the lawn, and give yourself a brisk scrubbing while the raindrops wash every thing away. It does not make any difference how hard it rains, for there is nothing but yourself to get wet. You are like the ducks in the puddle—the harder it rains the more they enjoy themselves. All you need is a dry towel when you get under shelter. Unless you have things fixed expressly for this sort of work you may get sand or grit on your feet as you start to go back to bed; but in our Florida home we have beautiful clean white cement walks running right up to the different porches; and when I want to come in, say after wading in the wet grass, I walk over these cement walks until I get to the door-mat, and then in a twinkling my feet are clean enough, especially after being rubbed with a towel, to step into any bed without soiling the sheets in the least. And this reminds me that Terry speaks of taking his cold-water bath in the open air whenever the weather will permit; and I tell you, friends, a sun bath every few days, if not every day, is almost as important as a water bath. While you are letting the sunshine strike every part of your body, do not forget to pound and rub and exercise every muscle all over your frame. It is God's medicine, as cheap and as free as the air you breathe, and the raindrops I have just been talking about. Some people have been astonished because Terry says, "No soap—just clean water." Well, at present I like a little soap around my face, eyes, and nostrils. May be that in time I can dispense with even that. Now just one more thing.

For years past I have been troubled with dizziness or vertigo when stooping over—say to pick strawberries, pull weeds, etc. Well, now look here. I want your full attention, every one of you. I have just discovered, or think I have, that this vertigo or dizziness is caused by poor circulation induced by a cramping position when one is stooping over; and this stoppage of the circulation is caused principally or entirely by your clothing restricting the bending of the body. A man has to pull up the knees of his pants when he stoops over. Now, then, if you were going into your garden to pull weeds or pick berries with nothing on but your nightgown, you could

work easily and comfortably. You see there is nothing in the way to prevent the body assuming any position required. I hope the time will come when custom will permit people, especially elderly people, during hot weather, to wear a nightgown, not only all night but *all day long*. I think very many of you are perhaps already sleeping outdoors. Mrs. Root and I are just discussing an outdoor bedroom. Huber, as I have told you, has a bed on wheels that he pushes outdoors nights, and trundles back during the day. While at Agua Caliente hot springs in Arizona, I told you about sleeping outdoors when the thermometer was 112, even after dark, with nothing but the twinkling stars for a covering; and Huber declares that no roof is wanted in an outdoor sleeping-apartment. You can have a movable awning if you choose; but when the weather permits, even this should be thrown back out of the way so you will be right under the stars.

Now, dear friends, if this Home paper is not going back to the ways and customs of the times when God first put us on this earth, it is coming pretty near to it; and I firmly believe that the great Father has been answering my prayers by giving me this message to carry to you his children, as in the language of that beautiful hymn, he has chosen me (even me)

An ambassador to be
Of realms beyond the sea.

May God grant that this message may be the means of giving you the health, happiness, and joy that I have found in the past few weeks in practicing it.

In conclusion let me exhort you not only to *listen* to what I have been telling you, but to put it in practice. Follow the dear Savior's injunction in regard to food and raiment, and you will surely find a wonderful truth in our first text. Of course, I suppose that text refers primarily to spiritual matters; but I am sure it also includes the things I have been talking about. You will not only have a *longer* life, but you will have it "more abundantly." And this same nightgown will enable you to save expense. I suppose it is necessary that even we elderly people should follow the fashions to a certain extent; but we certainly do not need *extravagant* raiment.

By the way, I have recently been looking the New Testament through from beginning to end in order to determine a little more definitely what the dear Savior ate for food while here on earth, and what sort of raiment he wore. When he fed the multitude with loaves and fishes I suppose he ate some of the same himself. At one time he made a little banquet for his disciples; and the only mention made of what they ate is fishes cooked on the coals, and honey and honey-comb. At another time he asked them for some food, and ate in their presence a fish and some honey. At another time his disciples ate uncooked wheat, which they shelled out on the sabbath day. We are not told that he partook of the same;

but I think it is quite likely that he did. So Terry's strong point for uncooked wheat has a precedent away back in Bible times. When he cursed the barren fig-tree because it bore no fruit we are given to understand, at least indirectly, that he partook of that fruit. While at the ruler's feast where he was invited, he probably partook lightly of things the other people ate. In regard to raiment, very little is told us. He was in the habit of washing his feet, or having them washed, because he several times mentions it. Without doubt, he took daily or very frequent baths, as was the common custom of the Jews; and I am inclined to think that not only his raiment but the common raiment of the times was something not far different from our present nightgown or perhaps bath-robe; and I am sure that most people, especially in the cities, would be greatly benefited by some sort of nightgown or nightrobe, at least during the summer months.*

In Cuba, small children wear no clothing at all in many places until they are seven or eight years old. In fact, one often sees naked children, both boys and girls, around in front of the schoolhouse, as naked as when they came into the world. I never learned that they were permitted to go inside in that condition. In visiting a doctor's family, one who took GLEANINGS, and who is a bee-keeper, I found three or four children romping about the premises entirely naked. Now, of course, we are not ready to recommend any thing of this kind here in America unless, indeed, it is the babies, say in the bath-room or nursery. I have often thought, when I saw the little ones just learning to creep or walk, that it would be a mercy to them to remove their clothing entirely, or all of it except the indispensable diaper. I wonder if the time is not coming, and coming soon, when there will be a modification in clothing with the view of giving them better health, better lives, and that "more abundantly."

OPIUM AND OPIUM-DENS BANISHED FROM FOO CHOW, CHINA.

On page 393, June 15, I spoke about Rev. W. L. Beard's report in regard to the opium business in China. Just now the *American Board Quarterly News Bulletin* for Aug. 17 contains the following:

CHINA ABOLISHING OPIUM.

A magnificent fight is now going on in China for the suppression of the use and trade in opium. It has often been said that the Chinese, both rulers and people, were wholly insincere in their utterance against the use of the drug, and that the proclamations against the cultivation of the poppy and the smoking of opium were a sheer pretense. The rulers themselves were said to be victims of the vice, and there

* Sheldon, in his books, has given us some wonderful and inspiring suggestions in regard to "doing as Jesus would do," and following "In his Steps." Now, how many are there, whose eyes rest on these pages, who would be willing to take up with, or, perhaps I should say, *put up* with such a diet as our Savior probably used? How many of us would be ready to adopt a style of raiment not more expensive and not more elaborate than the garb Jesus wore? Of course, one does not wish to attract attention by being singular or by looking odd; but if a community of people could be induced to go back to this simple life it would certainly be a wonderful help in the way of health and longevity.

was no hope for reform. All this was apparently true three or four years ago, but it is not so now. Those who read Mr. Beard's story in the September *Missionary Herald* of China's new opium war will agree that nowhere in the world is there a manlier or more vigorous fight against this vice than that now going on in the province of Fukien, as well as in other parts of China. And this war is waged by the Chinese themselves, aided, of course, by all moral and Christian forces at work in the empire. In the great city of Foochow, of more than a million inhabitants, every opium den has been closed; whereas five years ago there were more of these joints than there were of rice-shops. In the country the fields of poppies which previously met the eye everywhere are now entirely free from the plant, and in many places wheat is being raised instead. The best citizens have joined with the officials in prosecuting the reform. We gain a new impression as to the moral stamina of the Chinese, and a new hope for the missionary work throughout the empire as we read Mr. Beard's account. The Chinese are worth saving. The occasional public burning, in the presence of thousands of people, of the pipes, lamps, and utensils of opium-smoking must be a profoundly interesting sight in a city which was so recently given over to the use of opium.

May God be praised for the reform work which is not only taking root, but which is growing with vigor away over on the opposite side of this world of ours.

High-pressure Gardening

By A. I. ROOT

HIGH-PRESSURE CORNFIELDS.

A few days ago I had the pleasure of studying cornfields all the way from Bradenton, Fla., to Medina, O. As the trip occupied two nights and a part of three days I could not see the cornfields in the nighttime; but I arranged my travels so that, in the trip going down, I had daylight where it was night coming back. Now I want to tell you what I saw. Away down in Southern Florida the corn had mostly been harvested. Occasionally I saw dried-up ears hanging to the stalks. Well, I saw all kinds of cornfields, all the way from almost nothing at all on the ground, clear up to the beautiful thrifty luxuriant fields in Southwestern Ohio. The corn in Florida is mostly very poor; and, in fact, I saw poor fields of corn all the way from Florida to Ohio; and I also saw a few good fields of growing corn in almost every locality all along the whole trip, showing that, if one is posted, and goes about it right, he can grow corn almost anywhere; but, of course, the cornfields were better, as a rule, the further we got north. Now, the sad and lamentable thing about this whole object-lesson is that there were almost a hundred poor acres of corn to one real good one.

It is a sad and stubborn fact that thousands of people go through the motion of planting, cultivating, and harvesting a crop of corn without receiving any thing *near* like a fair price for their time and labor. Hundreds of fields are drowned out by a lack of drainage. There may be some excuse for going on in this sort of way, because once in a while we have a season where the corn is not drowned out by too much rain.

As a rule, it seems to me everybody has *too much* land. All along when we got to little towns I would find garden patches of nice corn, showing that with drainage, fertilizers, and cultivation, etc., it is possible to grow good crops almost anywhere. As we came further north there were more good

fields and fewer poor ones; but not until we got into Southern Ohio did I see acre after acre and *mile after mile* of corn that was *all* good. Great heavy ears were bending over and hanging down in field after field, and one field was just like another—none poor at all. This is the great corn region, where there is rich black soil and almost perfect tile drainage, or at least open ditches. Interspersed among the cornfields were fields of red clover rank in full bloom. And this clover rotation is the key to the great corn crops. And, by the way, where these crops are all good, and always good, you see fine farm dwellings, telephone lines, and prosperous towns and cities. So far as I know, it would pay the farmers in almost every State in the Union to get a glimpse of the rich farming lands in Southwestern Ohio.

Now, do not understand that I am advising you to sell your farm and move to a better locality. You will find the price of such land away up in those localities. What you want to do is to find out by careful experiment how to grow some rank, thrifty, high-pressure corn in *your* garden, say on a few rods of ground. Now, when you find out just what is wanted in your own locality, work early and late. First get a whole acre to do the same, then another acre, and so on, until you get your whole field up to high-pressure corn-growing. It can be done, and it will pay.

Of course, the best place to raise corn on a large scale is in the corn regions; but if you are going through the motions needed to get a crop, for *heaven's sake* get your ground in such condition that every motion, when you *do* make it, will count. The same with any crop; and if you do not know how or what to do, hunt up some man in your neighborhood who is *already* making a success with some particular crop. If you come and take a look at our cornfield to-day, Aug. 23, you would see that I *do* "practice what I preach." See pages 362 and 431, June 1st and July 1st issues.

Notes of Travel

By A. I. Root

FLORIDA IN THE SUMMER TIME, CONTINUED.

In addition to what I told you in the last issue, permit me to say that I greatly enjoyed my trip of 25 days to Florida in July and August. A steady temperature of between 80 and 90 seemed to have the effect on me of banishing all catarrh, grip, hay fever, and every thing of that kind, so my throat and nostrils were clearer and cleaner than they had been before for years. Of course, my daily baths (in the air as well as in water), with the massage mentioned on another page, had much to do with it.

I arrived home on the 13th of August, and am still enjoying excellent health. In re-

gard to gardening and crops in the summer time, there is something peculiar to Florida that is hard to understand. There are quite a good many crops that do not seem to stand the steady hot temperature and abundant rain there, while there are other things that grow nicely. When I first arrived, my neighbor Rood called my attention to a plot of rich ground on which beggarweed was just coming up; and he said he wanted me to take another look at it just before I went back home. To my great surprise 't was all of two feet high, and some of it nearly a yard; and so far as I know this wonderful growth had all been made in thirty or forty days.

I was talking with a man on the cars who grows oranges and grape fruit, and I asked him why their orchards were permitted to grow great tall weeds clear up close to the tree. He said this big growth was needed in Florida to turn under to furnish humus. But he said that, while this beggarweed was worth \$1.25 per 100 for hay, most people thought they could not afford to turn it *all* under, so they cut it and either sold the hay or used it for feed, and then turned under the sod. Now, just think of it! Mr. Rood had already had *two* good paying crops on that piece of ground before growing that beggarweed for hay in thirty or forty days; and yet notwithstanding the fact that he was doing this kind of work year after year there is land all around him that is producing absolutely nothing. A near neighbor has a piece of five acres that I do not think has ever produced a crop of any sort since I have lived in that neighborhood. Mr. Rood's ground is tile-drained. He has also an artesian well for sub-irrigation, and he uses fertilizers liberally on almost every crop.

When I wrote about the mango in our last issue I had never tasted one of the large improved varieties of the fruit. They have been improved so much that they are free from the cotton-like fiber. These large fruits are sold in cities for 50 cts., and sometimes even 75 cts. each; and when I put the first slice of them in my mouth I said it was ahead of the most luscious peach I had ever tasted. At present this new large improved variety is not plentiful, and the fruit sells at a high price; but the common mango, about as large as a goose egg, is very plentiful in the market at only 15 cents a dozen, and they are certainly a most luscious fruit.

The well-known scuppernong grapes were just ripening when I left, and I do believe they are, to my taste, more agreeable grapes than we have here in the North, or even in California. A single scuppernong grapevine with a trellis to support its great branches will often produce as many grapes in one season as a good stout horse can draw. They were retailing in the market, when I left, at ten cents a quart.

Now, then, about the disagreeable things about Florida in summer. Mrs. Root reminds me that, in accordance with my natural disposition, I have given a better glimpse of the pleasant things than I have

about the other side, so I will try to write up the disagreeable things. When the rainfall comes in the summer at the rate of six inches in four hours, as it did once last July in many places, there will be disagreeable floods of water. Of course, proper ditching and drainage would in most cases obviate this. While on the cars we stopped in one town where every street was full of water, and most of the people were wading. A good many times the sandy roads are cut down by heavy traffic so the road is lower than the ground on each side of it. During the wet season these low-down roads are often full of standing water. In this town I have mentioned we passed an automobile where water stood clear up to the axletree. A boy with his trousers rolled up was bringing a horse from the livery-stable. The horse tramped along through the water, knee-keep, until he could be hitched to a rope to pull the auto up on to dry ground. The occupants of the machine looked as if they were very much annoyed. Well, the water did not trouble us very much around our own home, because we have open ditches provided for all such emergencies. The thing that did trouble me, and has always given me more trouble in Florida than any thing else, winter and summer, is the red bugs—see p. 538. Mr. Root suggested that, if I were to give the readers of *GLEANINGS* a glimpse of my ankles when I first got home, very few people would want to go to Florida. I presume we can, with very little trouble, as suggested on other pages, get entirely free from the stick-tight fleas; but the red bugs are a different proposition. I have asked one of the professors at the Florida experiment station to give me what information he could get hold of on the subject, and I do think the whole State of Florida (or, better still, the Department at Washington, D. C.) should set to work and give the people a full history of the way this red bug propagates, and the methods of prevention and cure.

UNIVERSITY OF FLORIDA,
AGRICULTURAL EXPERIMENT STATION,
GAINESVILLE.

Mr. A. I. Root.—Your letter of a recent date regarding red bugs has been received. I am not sure that I can give you any better remedy for disposing of these pests than what you have already been using. However, a good many find that lemon juice is very efficacious in destroying them. The lemon juice is applied to the affected parts the same as you apply your sal soda and kerosene. Others find that good tar soap is very effective. I can not refer you to any published literature along this line.

JOHN M. SCOTT,
Assistant Director.

Now let me add, in order to be truthful, that old residents are troubled but very little by these pests. Raymond Rood, a schoolboy of a dozen summers, goes all around through the woods and everywhere else with his trousers rolled up to his knees, barefoot, of course, and the red bugs do not touch him; while just as soon as I set foot in that locality, especially if I go out through the woods or even among the stuff in my garden, it seems as if they would almost eat me up. My impression is that one who stays

on the pavement or even on the traveled roads would have little or no trouble. These insects seem to be on rotten logs and stumps, and perhaps on the brush and growing stuff in the woods. The effect is just about like that of poison ivy or other poisonous plants here in the North; and several have suggested that I was simply poisoned. But those who ought to know say it was red bugs and nothing else. The bite of the mosquitoes or even little gnats often affect me in much the same manner. The little gnats are *sometimes* troublesome in the morning and evening in Florida.

Perhaps I might tell you that, while the temptation to scratch the affected spots is almost overpowering, you will get along very much better if you do not do any scratching at all. I think many of you have found the same thing true in regard to mosquito bites and even bee-stings. The directions I gave years ago in the A B C book in regard to bee-stings was, after you get the sting out, let the wound alone, "get busy," and think of something else. Just one thing more. The whole trouble is ended very quickly when you get away from Florida. By the time I reached my Ohio home the burning and itching had ceased entirely, and in two or three days my ankles were in a normal condition. I forgot to say a cold-water bath and brisk rubbing with a coarse towel gives the best and most immediate relief of any thing I know of. Northern hunters, when going out through the woods, surveyors, and many other people, wear tight leather leggings from the shoe up to the knee, and I have been told that this is a positive remedy for these microscopic bugs that exist in the woods.

There, friends, I can not think of any thing else by way of objection to living in Florida during the summer; in fact, I found it a very much more comfortable place during our *hottest* summer weather than it is here in Ohio.

HOW HOT IS IT IN FLORIDA IN SUMMER?

On page 537 of our last issue I told you I had once seen the thermometer up to 94. My neighbor, Mr. Ten Broeck, however, calls me to order. He said my thermometer, even though it was a standard, and practically correct, was hung in our woodshed; and in the forenoon especially the sun came down very hot on the east wall and roof of said shed. While we were talking the mercury stood at 94. He asked me to hang it by the side of a north window in our sitting-room. In a few minutes I looked again, and the temperature was exactly 90. This incident reminds us all that it makes a difference where we place a thermometer. "In the shade" is not always very definite. If you wish to be correct, place the instrument in some place in the house where the sun does not strike, even at noon, nor on the wall on the outside where it hangs. The temperature during the three weeks mentioned was never above 90, and only a few times below 75. In the night it

TEN YEARS OF JULY WEATHER IN BRADENTOWN.

YEAR	Below 85 at noon	Below 75 in morn'g	Cloudy Days	Partly cloudy days	Northwest gales	Rainy days	Amount of rain	Minimum	Maximum	Mean Minimum	Mean Maximum
1901.....	0	3	4	11	0	10	7.60	75	92	76	89.8
1902.....	1	3	2	12	0	4	10.00	70	96	75.4	91.4
1903.....	1	20	3	18	0	10	9.75	71	93	74	89
1904.....	5	27	0	7	0	14	11.70	67	90	72.6	85.8
1905.....	6	16	1	20	0	13	9.14	70	91	74	86.8
1906.....	6	6	1	16	0	11	7.16	74	90	75.5	86.5
1907.....	3	24	0	19	0	11	7.20	66	90	69.7	87.9
1908.....	2	26	0	8	1	10	6.61	68	91	72	88
1909.....	4	5	2	20	0	14	13.97	72	91	73	86
1910.....	5	25	0	20	0	15	8.85	67	90	72	86.4
Means.....	3.3	15.5	1.3	15.1		11.2	9.18	69.8	91.4	73.4	87.7

generally stands at 75 or 80; but several old residents assured me that I had accidentally picked out about the three warmest weeks they had had in a dozen years. That you may have accurate figures in the matter, I submit the above table of temperatures for July, for ten years past, furnished by Mr. Ten Broeck.

From the table it will be seen July was about the average for ten years past, the greatest departure being in the number of mornings with the temperature below 75°. In regard to the number of days on which rain fell, it is to be noted that the hours of rainfall are few in number. On several of the rainy days the sun shone all the time except during the shower. The average duration of rains is about 30 minutes; seldom over an hour. During 18 years there have been only four days on which rain fell continuously from sunrise to sunset. It will be noted that in no day in last July was it entirely cloudy. Those features of the absence of much cloudy weather and long rains make the Florida climate so delightful. The heat, too, while steadily uniform, is never so extreme as it is further north; and the absence of chilly weather, when fires or thick clothing is necessary, that is so common north, is also a delightful feature of the Florida climate during the summer season; so that it may be safely asserted that the climate of Florida is the least miserable of that of any part of the United States. The Pacific coast, with its rainless summer and consequent dust and high range of temperature, is a good deal more miserable than the moist summer season of Florida with its lower range of temperature and vigorous growth of vegetation. Then in winter the Pacific coast has its long cold rainy spells and gales, and Florida has dry clear weather, with just rain enough till March; then we are usually short, it must be confessed, till June.

H. H. TEN BROECK.

WATER FOR DRINKING PURPOSES; WHERE SHALL WE GET IT?

Since Terry's book has gone out, inquiries keep coming right along as to where to get such a filter as he describes. In answer to the question, he sends us the following;

Dear Mr. Root:—The man whose letter you enclosed asks for a filter to make rain water nice and clean. The one we have used for years, bought of Montgomery Ward & Co., is a complete success for this purpose. It is the best I know of on the market. Of course, no filter will take mineral out of hard water. Boiling dangerous water is, of course, some help; but one simply eats the dead carcasses of the bacteria, instead of the live things. It doesn't seem as though there were any great gain. There are only two kinds of water that are right, the best known to mortals. They are clean rain water filtered, and distilled water. We use the former entirely. God gives any one a chance to have pure water.

Hudson, O., July 19. T. B. TERRY.

The above agrees exactly with my experience. Once in a while I am obliged to drink

water containing minerals; but I have so long been accustomed to pure soft water that nature always makes some kind of protest, especially when I drink the artesian water of Florida. I am told I might become accustomed to it, so it would be perfectly agreeable; but while rain water is so cheap I do not think I shall change my drinking-water. You will understand from what Terry says in the above that he filters even his rain water. Well, I suppose a good filter will remove some dust, dirt, and debris from almost any rain water, even if it falls on a clean slate roof. We have not used a filter for some years. Distilled water is, of course, all right; but the world seems slow in learning the importance of keeping this distilled water in either a glass or stoneware receptacle. If put into metal pails or tanks, especially galvanized receptacles, the *distilled* water begins at once to attack and dissolve with remarkable avidity almost any metal. Down in Florida, when it does not rain very often in the winter time, say for a week or more, I often catch water in a lot of clean tin pans set out in the rain. This is then kept in a large covered pitcher. Of course the pitcher is placed in the coolest place in the house; and this pure rain water suits me to a dot.

And by the way, friends, I do think that Montgomery Ward & Co. should have a vote of thanks from the whole United States, and perhaps from the whole wide world, for having done more toward establishing fair and uniform prices for every thing any one may want to buy. Their catalog will be worth dollars to you if studied, even if you never send them an order at all, because it gives you a birdseye view of what is in the market, and what you ought to pay for it.

PRICE OF SEED ADVANCING YEAR BY YEAR.

I have been very much interested in the possibilities of sweet clover as a soil-improver, for six or seven years. I have been obliged to lime my land and inoculate it with the sweet-clover bacteria, and am now making some headway. The first seed I bought in quantity was from Alabama at \$5.00 per 100 lbs., and for the last five or six years they have advanced the price each year, and the past spring I paid \$8.00 per 100 lbs., and freight. I am now sowing a little with other legumes in my eighty-acre orchard.

I have just started in with bees this spring, to see if they will make the setting of the apples any more certain.

DuBois, Ill., July 5.

A. A. HINKLEY.